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DETERMINING THE RELATIONSHIPS BETWEEN RESILIENCE, SPIRITUALITY, LIFE EVENTS, DISRUPTIONS, DEMOGRAPHIC CHARACTERISTICS, PERSONAL HISTORY, AND MENTAL HEALTH SYMPTOMS IN ACTIVE DUTY SOLDIERS WITH A RECENT DEPLOYMENT HISTORY

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by

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Dissertation

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Philosophy

The University of Texas at Austin

December, 2012

Dedication

All glory and honor to God who has ordered my steps…

To my mother and father, Diana and Hilford Tinnin for their love and support…

To my husband and best friend, James, for his unwavering support, motivation, and love as we embarked upon this journey…

To my precious daughter, Jayla, for your never-ending hugs and understanding when Mommy had to study and not play…

To all my family and friends who kept me lifted up in prayer…

And to all the Soldiers of the 4th BCT at Fort Campbell, whose sacrifice and dedication to make a difference made this study possible... I salute you.

Acknowledgements

First and foremost, I acknowledge my mentor, fellow Army officer, and dissertation chairperson, Dr. Linda Yoder for your endless support and guidance in my pursuit to do what some believed was impossible. You were there to jump the hurdles with me and for that I will always value you. Additionally, I would like to recognize the members of my dissertation committee for your time and dedication to review and make recommendations that made this dissertation better. And finally, to Colonel Joy Napper, Mrs. JoJo Huber, and the Command Group from the 4th BCT at Fort Campbell for your efforts and time coordinating the details and granting access to your Soldiers during data collection.

DETERMINING THE RELATIONSHIPS BETWEEN RESILIENCE, SPIRITUALITY, LIFE EVENTS, DISRUPTIONS, DEMOGRAPHIC CHARACTERISTICS, PERSONAL HISTORY, AND MENTAL HEALTH SYMPTOMS IN ACTIVE DUTY SOLDIERS WITH A RECENT DEPLOYMENT HISTORY

Publication No. _____

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The University of Texas at Austin, 2012

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Of the approximately 1.6 million Soldiers who deployed to Iraq or Afghanistan at least one time between 2001 and 2007, 18.5% screened positive for posttraumatic stress disorder symptoms post-deployment. Deployed Soldiers are at a high risk for unsuccessful reintegration as evidenced by the presence of mental health symptoms. Because of the lack of evidence demonstrating the relationships between resilience and other factors that may contribute to mental health outcomes in active duty Soldiers, the purpose of this study was to determine if relationships existed among these variables in Soldiers with a recent deployment history. An adaptation of Richardson's Metatheory of resilience guided this study.

A convenience sample of 350 active duty junior enlisted and Non-Commissioned Officers (NCOs) who were within 6 - 12 months from returning from deployment to Iraq or Afghanistan and stationed at Fort Campbell were recruited to participate in this prospective, descriptive, correlational study. Seven self-report instruments were used to collect data: (1) Demographic Survey, (2) Connor-Davidson Resilience Scale, (3) Deployment Risk and Resiliency Inventory (DRRI), (4) Daily Spiritual Experiences Scale, (5) Generalized Anxiety Disorder-7, (6) Center for Epidemiological Studies Depression Scale, and (7) Post-Traumatic Stress Disorder Checklist-Military Version. Data was entered into SPSS 18 and analyzed using descriptive statistics, correlations, and hierarchical linear regression.

Results revealed many statistically significant correlations. Taken together, 10 predictors resulted from this analysis and were placed into separate regression analyses with the three mental health outcomes. Each outcome accounted for a significant amount of variance in the other. In addition to PTSD and depression, low levels of resilience accounted for the most significant amount of variance in anxiety symptoms. In addition to anxiety and PTSD symptoms, post-deployment life events accounted for the most significant amount of variance in depression symptoms. Deployment environment accounted for the most significant amount of variance in PTSD symptoms, in addition to anxiety and depression. The implications of the findings and recommendations for future nursing practice, education, and research opportunities are abundant.

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CHAPTER 1

INTRODUCTION

Since 2001, over 2.1 million service members (SMs) have deployed to Iraq and Afghanistan including over 290,000 Army Soldiers, many of whom have deployed multiple times in the past 10 years (Belasco, 2009; Hosek & Martorell, 2009). Of those who have deployed, over 40,000 were wounded in action and over 5000 were killed in action (Carey, 2010; Martinez, 2010). SMs witness devastating injuries from Improvised Explosive Devices (IEDs) and other weapons of war to those who come into contact with these weapons. Such events of war have left imprints on the minds of SMs who must return home after deployment and continue to carry out the military mission, fully expecting to return to the war within one to four years. These mental imprints often leave wounds that go unnoticed and untreated to some extent due to the stigma that has surrounded mental health care in the military (Casey, 2011).

Of those SMs who have deployed between 2001 and 2007, it was estimated that 18.5% screened positive for posttraumatic stress disorder (PTSD) symptoms, including anxiety and depression, post-deployment (Tanielian et al., 2008). PTSD places these SMs at an increased risk for mental illness and suicide. In response to growing trends in Soldier suicides, the Army instituted mandatory resilience training; however, there has been a scanty amount of empirical research conducted to substantiate increased

resilience in this population as a result of the training. A desire to better understand the factors that may contribute to the level of resilience, such as spirituality, life events, disruptions, demographic characteristics, and personal history in active duty Soldiers with a recent deployment history, led to the conception of this study.

Purpose

Because of the lack of empirical evidence demonstrating a relationship between resilience, spirituality, and mental health symptoms in active duty Soldiers, the purpose of this descriptive, correlational, cross-sectional study was to determine if relationships existed among these variables in active duty Soldiers following deployment to the Iraq Theater of Operations.

Background and Significance

It is critical to understand the culture of the military prior to discussing Soldier resilience because military culture plays an essential role in the mental and physical development of SMs. Military culture includes the attitudes, values, and goals that influence behavior, which are embedded in customs, practices, and leadership traditions (Siegl, 2008). Regardless of the reasons that people join the military, they must be willing to put aside their self interests and serve the country protecting the freedom of every citizen in the United States. This is the foundation of the military, placing the mission first. While the missions of most civilian organizations require employees to work full-time and give 100 percent support to the organization, few order their

employees be on-call 24 hours a day, seven days a week, without additional monetary compensation, regardless of any personal or family plans. This is required of SMs; they must be selflessly committed to serving the country first. For this reason, Soldiers have been regarded as “custodians of the nation’s defense” (Bonn, 2005, p. vii).

Mental stability and toughness are two unwritten requirements for surviving in the military environment. Duty and honor are two values that must be adhered to in order to endure the unique challenges and be successful in the military. Duty means accomplishing the mission to the best of one’s ability, successfully performing all assigned responsibilities, and being willing to fight and win (Bonn, 2005). Honor means doing the right thing at all times, even if no one is watching; adhering to both moral and legal codes, and making decisions that are in the best interest of the military and the country (Bonn, 2005). These requirements place great pressure on SMs.

The immense stress placed on SMs can have a negative effect on their mental health (Langston, Gould, & Greenberg, 2007). Additionally, there has been great stigma associated with seeking assistance for mental health in the military. Hoge et al. (2004) discussed barriers to seeking mental health care and concluded that of the number of SMs who screened positive for anxiety, depression, or PTSD, less than 40 percent sought assistance because they feared how peers and military leaders would perceive them. One significant barrier was the overwhelming fear that if SMs seek mental health services, their peers and others in their units will consider them weak and their careers would suffer (Kuehn, 2009). The belief resonates that SMs who admit they need mental health care are unable to focus on the needs of their units, which could compromise the

mission. Leaders at the highest levels are now trying to decrease the stigma surrounding seeking mental health care and are implementing many programs believed to increase SMs resilience, which is assumed to influence mental health symptoms (Cornum, Matthews, & Seligman, 2011).

Despite recent efforts, the fear and stigma that surrounds admitting the need for help with mental health symptoms continues to afflict those returning from deployment to Iraq. Deployed Soldiers are at a high risk for mental health symptoms, such as anxiety, depression, and PTSD, which also places them at greater risk for suicide (Hoge et al., 2004; LaPierre, Schwegler, & LaBauve, 2007). Over the past five years, approximately 446 Soldiers have committed suicide (Kuehn, 2009). In 2008, the total number of Soldiers that committed suicide throughout the year was the highest it has been since the Pentagon started tracking Soldier suicides 28 years ago (Starr & Mount, 2009). And the number continues to rise; 32 Soldiers committed suicide during the month of July, 2011, surpassing the previous record for a monthly total of 31 Soldiers set in June 2010 (Jaffe, 2011). Moreover, two-thirds of all Soldier suicides are committed either in war zones or once the Soldier returns from deployment (Thompson, 2010). As a response to these negative trends, the Army has initiated several interventions to help Soldiers; Resiliency training is one intervention that is mandatory for Soldiers. However, recent data suggests that the interventions have not had a significant impact on preventing Soldier suicides (Jaffe, 2011).

Statement of the Problem

Resilience may be the key to decreasing the incidence of anxiety, depression, and PTSD in active duty Soldiers; however, little research has been published exclusively examining resilience in this population using valid and reliable research instruments (LaPierre et al., 2007; Schaubroeck, Riolli, Peng, & Spain, 2011; Vogt, Proctor, King, King, & Vasterling, 2008; Vythilingam et al., 2009). Furthermore, only one study examined the relationship between spirituality and active duty Soldiers' resilience (Lester, Harms, Bulling, Herian, & Spain, 2011). Moreover, the Army is currently projected to spend between $117 and $125 million on resilience training programs that were implemented in 2009 and are budgeted thru 2013 (Carey, 2009; Conniff, 2011). "Resilience Campuses" and Centers were established at Army installations such as Fort Hood and Fort Riley. These campuses contain health and wellness programs designed for active duty Soldiers and their family members to focus on building resiliency (Tarrant & Hebert, 2010). Although these efforts are commendable, there is little evidence that resilience is related to improved mental health outcomes among active duty Soldiers. Therefore, this study will prospectively examine if resilience is indeed related to mental health symptoms in active duty Soldiers and what influence if any, spirituality, life events, disruption due to deployment, demographic characteristics, and personal history have on Soldiers' resilience. Furthermore, this research concerning resilience can inform military leaders,

researchers, and healthcare providers about factors that affect Soldiers' ability to survive and thrive despite the unique challenges of serving in the military environment.

Research Questions

Using a population of Soldiers who have returned to the United States from deployment to Iraq within the last 6-12 months, the research questions for this study were:

1. What is the strength of the relationship between resilience and mental health symptoms (anxiety, depression, and PTSD)?
2. What is the strength of the relationship between spirituality and resilience?
3. What are the relationships between life events and resilience?
4. What are the strengths of the relationships between resilience, spirituality, life events, disruptions due to deployment, demographic characteristics, personal history, and mental health symptoms?

Conceptual Framework

Richardson's Resiliency Model

Richardson's metatheory of resilience examined resilience as a process whereby one develops resilience qualities by experiencing life events. Richardson (2002) combined both the ability to overcome adversity and protective factors with spiritual harmony, which are thought to combine to create a more resilient person. Richardson

(2002) discussed resilience in three waves: First, resilience qualities that help people grow, such as self-esteem and social support; second, resilience as a dynamic process that considers all the protective factors that help one overcome adversity; and third, innate resilience as the inner force that drives a person toward harmony and successful reintegration.

While researching the first wave of resilience, Richardson (2002) examined the literature for characteristics of people who were successful, despite growing up in challenging circumstances. He found those considered to be more resilient to have the following characteristics in common: self-esteem, self-efficacy, and a strong social support system. Werner and Smith (1992) conducted a longitudinal study examining a group of children who were born on the island of Kauai and were considered high risk because of the circumstances into which they were born (poverty, prematurity, and parental instability). They followed these children for 30 years and noted that approximately 36% of them succeeded despite their circumstances. Werner and Smith (1992) attributed their success to characteristics the children had in common as they aged. These characteristics included being achievement oriented, open-minded, and able to communicate. Females were more resilient than males and children who were surrounded with positive environments thrived despite adversity (Werner & Smith, 1992). These findings supported those of Rutter (1985), who considered protective factors to be those characteristics that modify a person's response to environmental stimuli. He also recognized common protective factors in children who were considered resilient. Rutter (1985) noted that being female, even-tempered, flexible, and having

high self-esteem and self-efficacy were protective factors for children. Additionally, Garmezy (1991), Benson (1997), and Myers (2000), all identified protective factors considered to help people recover from adverse situations and these factors were subsequently identified as the first wave of resilience by Richardson (2002).

The second wave of resilience considered how resilience qualities were developed. Richardson (2002) saw resilience as including both conscious and unconscious factors. Biopsychospiritual homeostasis in his model represented that time when one has adapted to their circumstances; their "comfort zone" (p. 311). He viewed the progression through disruption as a choice where people choose to either successfully reintegrate with growth and increased resilience or to dysfunctionally reintegrate where people choose to use illegal substances or destructive behavior to attempt to get past their disruption. While some individuals dysfunctionally reintegrate initially, after they receive therapy, it is possible they can progress to resilient reintegration (Richardson, 2002).

Resilient reintegration was further examined in the third wave of resiliency (Richardson, 2002). Here spirituality was the protective factor thought to be the source of strength that propels one through disruptions. Spiritual qualities included purpose in life and a belief in a higher being that provided a source of energy that caused a person to be more resilient. Richardson believed that everyone has a force within them that provides spiritual strength; resilience is developed when one discovers the source of that strength.

In summary, Werner and Smith (1992), Rutter (1985) and other researchers who sought to discover qualities that increased one's resilience influenced the Resiliency Model created by Richardson (2002). Richardson (2002) defined resilience as the inner strength that propels an individual through change and adversity to successfully transition through life. The goal of the resilience process was successful reintegration, where one develops "protective factors" that are useful when encountering subsequent challenges. Because Richardson's theory is a grand theory, it is too abstract to directly measure its concepts. Therefore, the conceptual framework for this study was created because it directly reflects the concepts that were measured in this study of resilience.

The independent variables in this study were: Resilience, spirituality, life events, disruption, demographic characteristics, and personal history. The dependent variables were mental health symptoms, as measured by the degree of mental health symptoms present-- anxiety, depression, and PTSD. In the conceptual framework that guided this study, variables are represented in the squares and the instruments used to measure each variable are represented in italics in the diamonds underneath the variables. The arrows are representative of the possible relationships between variables. The dotted line represents a possible indirect relationship between the variables (See Figure 1).

Demographic characteristics and personal history include both modifiable and non-modifiable characteristics unique to each Soldier. According to the literature, demographic variables and personal history have an influence on a person's level of resilience and mental health. Reger, Gahm, Swanson, and Duma (2009) concluded that Soldiers who deploy to Iraq two or more times are 60% to 77% more likely to screen

positive for mental health symptoms upon return. The majority of these characteristics are not modifiable; however, they provide a baseline of characteristics that may indirectly influence a Soldier's level of resilience.

Life events represent the beginning of the conceptual framework. Life events have been shown to be associated with *resilience* (Richardson, 2002; Rutter, 2006). Cabrera, Hoge, Bliese, Castro, and Messer (2007) concluded Soldiers with a higher prevalence of life events during childhood are more likely to experience mental health symptoms once deployed.

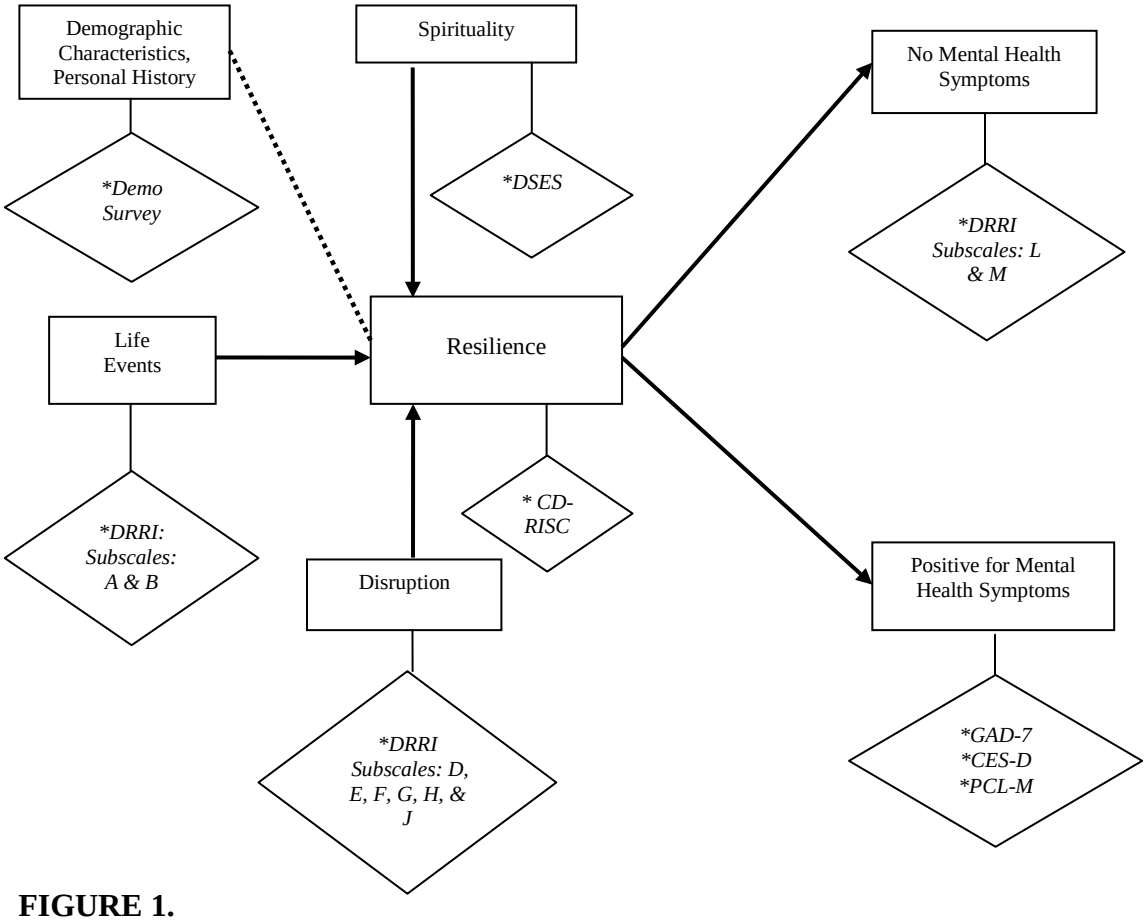

FIGURE 1.
Conceptual Framework (Adapted from Richardson, 2002)

Life events are thought to influence ones level of *resilience* thereby strengthening or failing to strengthen resilience; individuals with a high level of resilience are able to successfully handle change and adversity while those with a low level of resilience are negatively affected by change or adversity.

When an unplanned *disruption* occurs, such as a deployment, resilience is challenged. Deployment is viewed as a disruption because it separates the Soldier from familiar surroundings and circumstances. When Soldiers deploy, they go from neighborhoods or barracks, where things are familiar and they are able to move about freely, to places like Iraq, where their movements are severely restricted and enemies are not easily recognized. Deployment separates families and friends when Soldiers are sent to areas where the threat of death or severe disability is imminent. While some may argue that Soldiers know from the time they enter the military that deployment is a real possibility, the timing and length of deployments causes disruption in one's everyday life.

Disruptions, depending on one's level of resilience, lead either to the presence of mental health symptoms such as anxiety, depression, and PTSD, or no mental health symptoms. Depending on their level of resilience, Soldiers will either successfully transition through change upon returning from deployment, without mental health symptoms such as anxiety, depression, or PTSD; Conversely Soldiers may experience mental health symptoms in response to the disruption. These are the Soldier's who are at the highest risk for anxiety, depression, and PTSD symptoms, which may eventually lead to suicide if left untreated.

Spirituality may play a role in developing resilience in active duty Soldiers, which may affect mental health outcomes when disruptions occur. It is well documented in the literature that there is a positive relationship between those who are considered resilient and a belief in someone or something greater than themselves (Brenner, Homaifar, Adler, Wolfman, & Kemp, 2009; Grafton, Gillespie, & Henderson, 2010; Jackson, Firtko, & Edenborough, 2007; Richardson, 2002).

Model Assumptions

Resilience is assumed to be a linear process whereby Soldiers experience a disruption that draws upon their level of resilience and they either successfully or unsuccessfully transition home as evidenced by their post-deployment mental health. Each deployment is assumed to represent a separate process that has an independent outcome. Some SMs have deployed to Iraq more than one time. According to Cohen (2010), over 300,000 Soldiers have deployed three or more times since 2004. Each time Soldiers deploy, they go through the process of experiencing life disruption, drawing on their level of resilience, and transitioning home with or without mental health symptoms.

Another assumption is that spirituality or the lack of spirituality influences Soldiers level of resilience. Additionally, it is an assumption that SMs who are spiritual are more resilient than those who are not spiritual. Nevertheless, this relationship has yet to be fully explored in the active duty Army population.

Definitions

The following definitions clarify the major concepts of the study:

Resilience is the inner force that drives individuals to dig deep within themselves to find the strength needed to overcome negative situations (Richardson, 2002).

Life Events are events that occur from childhood through deployment and after the Soldier returns home. They include events such as experiencing a natural disaster or traumatic accident, the death of someone close to you, witnessing someone being assaulted or being killed, or experiencing divorce, rape, or unwanted sexual advances. These events are considered to influence ones level of resilience and are thought to be associated with mental health outcomes (Cabrera et al., 2007).

Disruption refers to those unplanned events that draw on one's level of resilience and either lead to positive or negative mental health outcomes. Richardson (2002) refers to disruptions as those things that cause change in one's life, which takes them out of their comfort zone. Disruptions may be positive such as a new job or negative such as a car accident. In this study, the disruption is centered on deployment to Iraq or Afghanistan.

Spirituality refers to a belief in someone or something higher than oneself to whom one is morally accountable. It is concerned with transcendence and addresses the meaning of life, assuming that there is more to life than we can see or hear (Underwood, 2006). Spirituality is more than going to church; it is living by standards and beliefs that make you accountable to that someone/something larger than self. According to Koenig (2008), spirituality is peacefulness, well-being, and values that can only be defined by the individual.

Demographic characteristics and personal history include age, race, gender, religion, the number of times deployed, whether or not resilience training was effective, etc., which were all factors that could have influenced variables in this conceptual framework.

Mental health symptoms included anxiety, depression, and PTSD.

-Anxiety is a mental disorder characterized by reoccurring disturbing thoughts or unrealistic worrying that may include physical symptoms such as increased heart rate, trembling, or sweating (American Psychiatric Association [APA], 2000).

-Depression is a mental disorder characterized by a lack of interest or pleasure in once pleasurable activities, an inability to concentrate, deep feelings of sadness, and physical symptoms such as a significant weight loss or gain, insomnia or excessive sleeping, and extreme fatigue (APA, 2000). The Diagnostic and Statistical Manual-IV (DSM-IV) also characterized depression as observable agitation, excessive or inappropriate guilt, or expressions of death or suicide with characteristics lasting two weeks or more (APA, 2000).

-PTSD is an anxiety problem that develops as a result of experiencing or witnessing a traumatic event (APA, 2000). A triad of symptoms including intrusive recollections, avoidant/numbing symptoms, and hyper-arousal symptoms such as irritability or difficulty concentrating characterizes PTSD (APA, 2000).

Limitations

Information collected in this study was self-reported. Due to the nature of the subjects under study, inaccuracy may be a result of discomfort with self-disclosure and fear of stigma surrounding mental health in the military. However, prior to completion of the instruments, Soldiers were reassured there were no right or wrong answers and the anonymity provided to the Soldiers participating in the study should have minimized this limitation. Another limitation inherent to this study was due to the nature of descriptive research, where results do not imply causation, only association.

Due to time, monetary constraints, and timing of deployment cycles, this study focused on active duty Soldiers at Fort Campbell who were within 6-12 months of returning from deployment. This will restrict our knowledge of how SMs from other branches, as well as other locations, would respond to the same research questions. However, this study will serve as the foundational work for a program of study concerning resilience in other Active Duty military populations by the principal investigator.

Chapter Summary

The stressors placed upon SMs are great. Not only must they adjust to the military culture and life events that influence their mental health, a large number of Soldiers have deployed to Iraq and Afghanistan more than once, which increases not only their stressors while deployed, but their mental health post-deployment. Deployed SMs are at great risk for anxiety, depression, and PTSD, which together increases their

risk for suicide. Although military leaders are attempting to change the culture that discriminates against SMs who have mental health symptoms, such as anxiety or depression, the stigma associated with SMs seeking treatment for mental health continues to exist. Such stigma may prevent some SMs from receiving the treatment they need. Resilience interventions have been implemented in an effort to decrease the stigma and increase the psychological health of SMs; however, there is no empirical evidence to support the efficacy of resilience programs in the Active Duty population and Soldiers continue to have difficulty reintegrating post-deployment.

Therefore, the purpose of this descriptive, correlational, cross-sectional study was to determine if there was a relationship between resilience, life events, life disruption, and mental health symptoms in active duty Soldiers who have deployed to Iraq and Afghanistan and returned in the past 6-12 months. Furthermore, this research determined the strengths of the relationships between spirituality and resilience in these active duty Soldiers.

CHAPTER 2

REVIEW OF LITERATURE

There is a vast amount of literature surrounding mental health symptoms in the military dating as far back as the Korean War. In the past 10 years, researchers have flooded the literature with information specifically about PTSD and the effect of the wars in Iraq and Afghanistan on the prevalence of anxiety, depression, and PTSD in military service members (SMs). Researchers also have shifted their focus concerning resilience away from children toward military SMs in an attempt to find ways to mitigate the effects of being at war. Much of the research concerning resilience has focused on examining National Guard and Reserve Soldiers. However, the literature surrounding the level of resilience and mental health symptoms in active duty Soldiers is scanty. Furthermore, the literature is filled with information surrounding spirituality and mental health, but few studies in the literature examine these factors through the lens of active duty Soldiers. With this in mind, defining resilience and the factors that influence psychological resilience as it relates to mental health symptoms will be presented, as well as spirituality and the relationship it may have to resilience and mental health symptoms.

Resilience

Resilience is most commonly defined as one's ability to survive and thrive despite negative circumstances (Campbell-Sills, Cohan, & Stein, 2006; Connor &

Davidson, 2003; Friborg, Hjemdal, Martinussen, & Rosenvinge, 2009; Lamb, Brady, & Lohman, 2009; Leipold & Greve, 2009). This definition was used in most descriptive studies that examined the relationships between resilience, personality traits, and overall resilience qualities. Resilience also is commonly defined as the ability to bounce back after experiencing adversity or challenges (Greene, 2002; Smith, Tooley, Christopher, & Kay, 2010; Wagnild & Collins, 2009). Denz-Penhey and Murdoch (2008) defined resilience as a way of being and acting, which causes one to connect to life outside their problems. Additionally, Richardson (2002) defined resilience as the inner force that drives individuals to dig deep within themselves to find the strength needed to overcome negative situations. Resilience has more recently been defined as the absence of PTSD signs and symptoms after experiencing trauma or catastrophe (Alim et al., 2008; Bonanno, Galea, Bucciarelli, & Valhov, 2006, 2007; Green et al., 2010; Lee, Schen, & Tran, 2009).

Several different definitions of resilience are used in the military literature including: (1) The inner strength necessary to overcome the negative effects of combat (Jarrett, 2008), (2) The ability to adapt or change in adverse circumstances (Elder & Clipp, 1989; Pietrzak, Johnson et al., 2010), (3) Finding positive meanings in adverse situations (Green et al., 2010; Pickering, Hammermeister, Ohlson, Holliday, & Ulmer, 2010), (4) Strengths that protect against developing mental illnesses in response to trauma (Hoge, Austin, & Pollack, 2007), (5) The ability to return to normal levels of functioning after experiencing trauma or adverse situations (Bowles & Bates, 2010), and (6) Positively adapting to stressful situations without developing mental illness

(Pickering et al., 2010; Pietrzak, Johnson, Goldstein, Malley, & Southwick, 2009). Resilience training currently provided by the Army is based on the work of Siebert (2005), who defined resilience as rebounding from adversity without acting in "dysfunctional or harmful ways" (p. 9). The most recent program developed for Soldiers, in collaboration with researchers at the University of Pennsylvania, defines resilience as the ability to thrive when challenged, bending without breaking (Sheehy, 2010). The definition of resilience that will guide this research is *the inner force that drives individuals to dig deep within themselves to find the strength needed to overcome negative situations* (Richardson, 2002). This definition captures the essence of resilience as both a spiritual and psychological drive to overcome challenges.

Resilience: Trait or State?

Resilience: Trait Characteristics

Resilience was first considered in terms of genetic predispositions toward success. There are both physiological and psychological traits of resilience discussed in the literature; however, this study focused specifically on psychological traits of resilience because that is the main focus of military resilience at the present time. Bernard (2002) hypothesized that everyone is born with innate resilience traits that are available and strengthened as one faces adversity. Rutter (1985) conceptualized these innate traits as protective factors that modify a response to stress or negative circumstances. These protective factors were thought to "toughen an individual" (p. 600) and included genetic factors such as gender and temperament.

Gender

Female children appeared to be more resilient to psychosocial trauma then did male children (Rutter, 1985). While the exact reasons behind this phenomenon were unknown, Rutter postulated that female children were shielded from negative environmental factors such as parental discord and physical violence. Werner and Smith (1992) found that females were less vulnerable to adverse environments during the first decade of life, and during adulthood. Boys were more vulnerable in childhood to socio-economic deficits, but were less vulnerable during adolescence. This is the period of time when two-thirds of the male participants who were considered resilient chose to join the military. Military service provided opportunities for these males to acquire education and other skills they may not have had been able to access due to their economic status (Werner & Smith, 1992). When studying a group of African Americans who had been exposed to trauma, Alim et al. (2008) found that females were less likely to be resilient than males. Similar findings were determined by Bonanno et al. (2007) when studying a group of New York citizens who lived there at the time of the attack on the World Trade Center. They found women were less than half as likely to be resilient as men ($OR = 0.44$, $CI = 0.25 – 0.77$).

The literature concerning military resilience suggests that male SMs overall are more resilient post-deployment than female SMs (LaPierre et al., 2007; Pietrzak & Southwick, 2011). Although the majority of research concerning military resilience focuses on combat units, which until recently excluded females, the percentage of resilient females continued to lag behind the percentage of resilient males (LaPierre

et al., 2007; Schok, Kleber, & Lensvelt-Mulders, 2010). Battlemind training that was thought to increase resilience in Soldiers was initially limited to those who were deploying (Castro, 2009). Men were therefore subjected to training that perhaps better prepared them for deployment. This preparation may have mitigated the effects of being deployed and assisted with their mental health upon redeployment (Castro, 2009; Polusny et al., 2009). Rundell (2006) found that female Soldiers were significantly more likely to be evacuated from Iraq for psychiatric reasons then men (19% vs 10%, $p \leq .001$). Furthermore, researchers demonstrated that being female is associated with developing PTSD symptoms following deployment (Carter-Visscher et al., 2010; Kehle et al., 2011; Smith et al., 2008). Carter-Visscher et al. (2010) found that female Soldiers who felt less prepared to deploy had significantly more mental health symptoms than male Soldiers ($p \leq .001$). Additionally, female Soldiers were found to have histories of more instances of sexual assault and emotional trauma than their male counterparts, which could account for their lower levels of resilience prior to deployment and increase their susceptibility to mental health symptoms (Carter-Visscher et al., 2010; Kang, H., Dalager, N., Mahan, C., & Ishii, E., 2005).

Temperament

Children who were viewed as being even tempered and malleable were thought to be more resilient (Rutter, 1985; Garmezy, Masten, & Tellegen, 1984; Greene, Galambos, & Lee, 2003; Smith & Carlson, 1997; Werner & Smith, 1992). These children were considered to be “easy” and were children that caretakers would cuddle and play with because they were so easy (Greene & Conrad, 2002). This enabled these

children to problem solve and they had higher self-esteem and self-confidence. Werner and Smith (1992) concluded that children who were resilient were easygoing, very intelligent, had high self esteem, and strong self-efficacy. These internal factors were believed to be traits present at birth, but not permanent—resilience is strengthened through challenges and life events and continues to grow through encounters with different people and events (Greene et al., 2003; Rutter, 1985). Hardiness, optimism, personal control, and self-efficacy are individual factors common to those considered resilient (Reivich, Seligman, & McBride, 2011).

Hardiness

Hardiness is a characteristic of temperament common in those who are considered resilient (Rutter, 1985). It is believed that hardiness develops early in life and remains relatively stable, although it can change both positively and negatively (Kobasa, 1979; Maddi, & Kobasa, 1984). Hardiness includes positive personal characteristics such as commitment, control, and flexibility, which are believed to help individuals survive and thrive despite encountering challenges (King, King, Fairbank, Keane, & Adams, 1998; Kobasa, Maddi, & Kahn, 1982). According to Bartone (1999), people who are hardy interpret painful and stressful experiences as being a typical part of life. In research involving military SMs, hardiness was found to decrease both depression and PTSD symptoms (Bartone, 1999; Dolan & Adler, 2006; King et al., 1998; Sutker, Davis, Uddo, & Ditta, 1995). For Soldiers, hardiness is considered essential for successful deployment experiences (Bartone, 1999).

Optimism

Optimism is a component of temperament that causes an individual to have more positive emotions and provides them with the ability to mobilize effective coping strategies during stressful situations (Yehuda, Brand, & Yang, 2006). Positive emotions help people develop coping strategies that allow them to manage and take control of the situation while developing effective ways to be successful in future challenges (Cohn, Fredrickson, Brown, Mikels, & Conway, 2009). For example, resilience was significantly related to positive affect in a group of Airmen preparing for deployment ($r = .62$, $p \leq .01$) (Maguen et al., 2008). Remaining optimistic and positive despite pre-deployment stressors provides resources that can be drawn upon to help when facing stressful times while deployed (Maguen et al., 2008). Alim et al. (2008) thought optimism promoted resilience and recovery by enabling people to experience positive emotions in the face of adversity. Additionally, the researchers thought optimism was linked to coping and these together caused resilient individuals to use social support during times of distress.

Personal Control

Believing that one can influence the direction of events in their life is personal control. It is a belief in destiny and the individual having the ability to control their own destiny; this belief helps to overcome adversity (Hoge et al., 2007). Personal control is thought to buffer against negative stress (Diehl & Hay, 2010). Additionally, control often comes from being prepared for challenges as they arise. For examples, Soldiers

who felt they were less prepared for deployment had a higher incidence of mental health symptoms then those who felt prepared (Carter-Visscher et al., 2010).

Self-efficacy

Bandura (1997) described self-efficacy as a personal belief in one's own ability to orchestrate different courses of action essential to one's own success. People who are resilient are thought to have control over their destiny and the ability to effect change. Rutter (1987) revealed that self-efficacy is strengthened by successfully accomplishing tasks such as playing a musical instrument or participating in sports. Furthermore, Maguen et al. (2008) stated that those who are successful and have successful missions while deployed return from deployment with increased resilience and self-efficacy. Additionally, Pietrzak and Southwick (2011) found that resilient soldiers had a significantly higher perception of purpose and control (*OR* = 1.45; *CI* = 1.13-1.85). For example, resilient Soldiers believed they could control the deployment environment and recommend changes to improve the deployment experience for themselves and others assigned to their unit (Schok et al., 2010).

Resilience: State Characteristics

As resilience research evolved, researchers further concluded that psychological resilience was determined by additional factors that may not be present at birth, but could be developed or nurtured at any point in the life cycle (Rutter, 1985; Werner & Smith, 1992; Cicchetti, 2010; Shetgiri et al., 2009). Resilience as a state includes "resilience potentials" that can be developed as needed to help one survive in

challenging circumstances (Siebert, 2005). They consist of external factors developed and reinforced by the family, community, society, and culture.

Family

The majority of children who had a supportive home environment, where family members were taught to love and value each other, grew up to be resilient and successful despite their economic situation (Clark, 1983). Werner and Smith (1992) found that children who grew up in homes with self-confident mothers were thought to be more resilient than other children. Mothers were most commonly credited with teaching children they are valued and supporting them, which was thought to increase resilience (Floyd, 1996; Werner & Smith, 1992). Floyd (1996) conducted a study examining 10 high school children who were from disadvantaged homes. While the students credited both mothers and fathers for being their source of support, Werner and Smith (1992) concluded that boys who had mothers that were psychologically stable and confident were more resilient. Some credited other family members who they were close to such as aunts or grandmothers. Simply having someone in the family who instilled discipline and positive values in children increased their self-esteem, causing them to be more resilient (Floyd, 1996; Rutter, 1985).

Often times, when considering family in the military, family includes others in the SMs' units and their families. The military is unique in the way that it quickly engulfs new Soldiers and helps them develop a team focus. The thought is that Soldiers are more likely to fight and adapt to the military environment if they care about their team (Cacioppo, Reis, & Zautra, 2011). In addition to the military team, Soldiers also

have their families, with whom they live and share many experiences beyond the military. Everyone in the family changes during deployment, the deployed Soldier, the spouse who is back home perhaps taking over both roles and responsibilities, and the children who continue to grow and develop both physically and mentally. These changes are often difficult for deployed Soldiers to cope with when they return; feeling that they are no longer needed or addressing their children's feelings of abandonment presents challenges to even the healthiest relationships (Bowling & Sherman, 2008). Soldiers who were in a relationship were found to be 5.6 times (*CI* = 1.23 - 25.72) more likely to be considered resilient (Pietrzak & Southwick, 2011).

The Comprehensive Soldier Fitness program has an added dimension that focuses on building family resilience (Casey, 2011). Although the focus is on family resilience, the basic premise is that SMs can only be as resilient as their families. Maguen et al. (2008) found that 76% (*N* = 328) of Airmen preparing for deployment had moderate to very high levels of concern about being separated from their families and 50% had concerns about their responsibilities to their families not being fulfilled while they were deployed. Bowling and Sherman (2008) warned that reintegrating after deployment can be as stressful as deploying. Therefore, both SMs and their families must be supported during the reintegration process. They both must be provided tools to empower them to manage the emotional effects of returning from deployment (Bowling & Sherman, 2008; Pietrzak & Southwick, 2011). Early interventions with both SMs and their families should reduce the incidence of divorce, domestic violence, and a variety of mental health problems in this population (Bowling & Sherman, 2008).

Community

Support from another adult outside the home proved to be a factor that increased the resilience of children because resilience can be learned when modeled by competent adults (Greene et al., 2003; Rutter, 1985). This adult could be a family friend, teacher, coach, or school counselor (Floyd, 1996). In discussions with participants in the latter part of the longitudinal study by Werner and Smith (1992), they noted participants in early adulthood who were more resilient identified a teacher who was their mentor and was a positive role model for them while growing up. Schools offer opportunities for community support through interactions between children and adults who expect success (Shetgiri et al., 2009). A supportive teacher can teach and model resilience and plays a pivotal role in helping children and adolescents develop resilience (Bernard, 1993). The support offered by adult mentors is believed to strengthen the level of protective factors such as self-efficacy that resonates throughout all phases of life (Rutter, 1985).

In the military, the leaders or other senior SMs become the role models that more junior SMs look to during times of stress. The tone set by the leaders shapes the resilience of not only the SM, but of the entire unit. According to Bartone (2006), leaders generate policies and procedures that set the tone of the environment whereby Soldiers perceptions of their experiences are formed. In a study conducted to examine hardiness and leadership skills of senior year West Point cadets, researchers found that cadets who had higher ratings of hardiness not only performed more effectively when in leadership positions, but were more favorably rated as leaders by their peers as well as

the West Point leaders (Bartone & Snook, 2000). These cadet leaders were thought to be more effective because they were able to help the group adjust during stressful times (Bartone & Snook, 2000). Typically, units that have lower incidences of mental health symptoms have leaders who Soldiers describe as supportive and caring. Castro (2009) found that Soldiers who thought they had good quality leaders had lower incidences of mental health symptoms as opposed to those who thought their leaders were "bad" (11% vs 28%). The numbers of those who screened positive for mental health symptoms rose dramatically when considering the impact of leaders in combat. Only 17% of Soldiers who viewed their leaders in a positive manner screened positive for mental health symptoms whereas 36% of those who screened positive for mental health symptoms viewed their leaders negatively. Leaders who can be trusted build strong, more cohesive units where individual and unit resilience can be increased (Maguen et al., 2008).

Society

Social characteristics refer to one's ability to make and maintain positive friendships with people who can be trusted, who are available, and able to reciprocate support during times of stress (Alim et al., 2008). Resilient people are able to interact with society in a way that attracts others. This ability to build strong networks allows resilient people to draw on their relationships during stressful times (Campbell-Sills et al., 2006; King et al., 1998; Rutter, 1985). Much has been written about the role that social support plays in increasing ones resilience, especially as National Guard and Reserve Soldiers return home from deployment (Pietrzak &

Southwick, 2011; Pietrzak et al., 2009; Pietrzak, Goldstein, Malley, Rivers, & Southwick., 2010; Polusny et al., 2009; Schok et al., 2010). Social support is critical to the survival of SMs, especially in the first six months after returning from deployment, when SMs are attempting to reintegrate with family members and friends (Agency Group, 2009; Bowling & Sherman, 2008; Warner, Appenzeller, Mullen, Warner, & Grieger, 2008). In a study conducted by Pietrzak, Johnson et al. (2010), resilience was significantly related to post-deployment social support (r = .51, $p \leq .001$) and post-deployment social support was significantly and negatively related to psychosocial difficulties (r = -.53, $p \leq .001$). This finding corroborates previous research on post-deployment social support in Vietnam Veteran's, which found the perceived lack of social support upon return from Vietnam adversely affected the mental health of returning Soldiers (Carey, 2010; Johnson et al., 1997; King et al., 1998; Pietrzak et al., 2009). Additionally, post-deployment social support was found to be significantly negatively related to anxiety (r = -.26, $p \leq .01$), depression (r = -.41, $p \leq .01$), and PTSD (r = -.41, $p \leq .01$) and significantly positively related to social desirability (r = .36, $p \leq .01$) in a group of French Canadian veterans (Fikretoglu, Brunet, Poundja, Guay, & Pedlar, 2006). Social support from friends and co-workers also was credited for helping protect the mental health of a sample of Vietnam War nurses (Gibbons, Hickling, & Watts, 2011; Sweat, Snow, & Eisenbrandt, 2000).

Culture

Culture includes the values, norms, beliefs, attitudes, and folkways of a family and community (Greene, Taylor, Evans, & Smith, 2002). Culture may contribute to

resilience by binding a group together and offering ways for the group to deal with stress. Culture is not restricted to a particular family, but is spread through a community (Greene et al., 2002). Culture encompasses race, ethnicity, religions, and social groups (Merriam-Webster, 2011). An individual's level of resilience is influenced by culture in several ways. Race (the physical characteristics people are identified by) and ethnicity (the commonality and connection among people of like origins) influence the level of resilience by both the opportunities and challenges they provide for individuals (Greene et al., 2002). For example, Native Americans and several ethnic minority groups have a history of oppression. Although it may have been decades ago, that history continues to influence the current generation's resilience. This feeling of oppression influences the way children are socialized and contributes to their overall sense of power or powerlessness, which either gives them the resilience to fight and overcome their situation or to succumb to the expectations placed upon them by society, despite their cultural upbringing (Greene et al., 2002).

The culture of the military also can influence the resilience of a Soldier. For many years the military culture has frowned upon Soldiers who had mental health symptoms (Casey, 2011). Soldiers feared seeking help because they were under the perception that doing so would harm their careers (Bruner & Woll, 2011; Casey, 2011; Cornum et al., 2011; Hoge et al., 2004). Soldiers also believed the leaders within their unit would treat them differently if the sought mental health care (Hoge et al., 2004; Warner et al., 2008). Leaders are currently working to erase this stigma and redefine the military culture as a culture of acceptance, where Soldiers are encouraged to seek

mental health care when needed and to recognize the signs of mental instability in other Soldiers (Casey, 2011; Cornum et al., 2011; Hoge et al., 2004).

Resilience and Mental Health

There are several factors that contribute to strengthening and diminishing ones mental health. These include not only the genetic predispositions to mental illness, but the events that occur early in life, which promote or fail to contribute to resilience. According to Rutter (1985), the timing and intensity of events can either facilitate the development of resilience traits or contribute to the development of stress induced mental illness. The number of traumatic events one experiences also influences resilience. Wingo et al. (2010) conducted a study in a low socioeconomic, traumatized community and found those who had two or more types of abuse of moderate to severe intensity were 5.2 times more likely to have lower resilience than those who had no trauma or mild abuse ($OR = 0.8$, $p \leq .001$). For Soldiers, the literature is filled with evidence that more life events (positive and negative) lower their level of resilience and increase the chances of mental illness post-deployment (Brailey, Vasterling, Proctor, Constans, & Friedman, 2007; Polusny et al., 2011).

Anxiety

A scanty amount of literature has empirically examined anxiety in Soldiers. One reason anxiety is less often identified is because it is often linked together with both depression and PTSD (Castro, 2009). Anxiety is believed to be the result of a Soldier's inability to replace the memories of war (Jovanovic & Ressler, 2010). Additionally,

combat Soldiers are in a state of hypervigilance while deployed and have a high perception of threat. (Castro, 2009). Soldiers who had a higher perception of threat were significantly more likely to develop anxiety symptoms (r = .42, $p \leq .01$) (King, King, Bolton, Knight, & Vogt, 2008). Kehle et al. (2011) found that female Soldiers were more likely than male Soldiers to be diagnosed with non-PTSD anxiety disorders after returning from deployment (25% vs 12%, $\chi^2 = 6.10$; $p \leq .01$). Additionally, female SMs with greater levels of anxiety were found to have lower levels of social support (r = -.52, $p \leq .01$) (Nayback-Beebe & Yoder, 2011). Furthermore, social support was significantly negatively correlated with measures of trait anxiety (r = -.26 to -.48, $p \leq .01$) (Hyde, Gorka, Manuck, & Hariri, 2011).

Depression

Sharkansky et al. (2000) examined the relationship between coping and combat related stress in Soldiers who had deployed to the Gulf War. They found that combat exposure (r = .17, $p \leq .001$) and female gender (r = .14, $p \leq .01$) were significant predictors of depression. Additionally, depression was significantly related to PTSD (r = .59, $p \leq .001$). Numerous researchers have conducted studies that corroborated these results (Green et al., 2010; Kehle et al., 2011; LaPierre et al., 2007; Sareen et al., 2007; Smith et al., 2008). For example, Carter-Visscher et al. (2010) found concerns about life and family functioning during deployment were significantly related to depression symptoms in female Soldiers (r = .46, $p \leq .05$). Female Soldiers were more likely to have PTSD symptoms; specifically, young female enlisted Soldiers with a deployment history were at increased risk for developing PTSD (Carter-Visscher et al.,

2010; Kehle et al., 2011; Nayback-Beebe, 2010; Smith et al., 2008; Smith et al., 2007). Other factors contributing to depression in Soldiers included childhood abuse and trauma (Carter-Visscher et al., 2010; Gahm, Lucenko, Retzlaff, & Fukuda, 2007; Wingo et al. 2010). Cabrera et al. (2007) substantiated this in a study where they examined the effects of childhood adversity on depression and PTSD in a cohort of Active Duty male Soldiers. They found that Soldiers who had more adverse childhood experiences were more likely to screen positive for depression than those who had fewer adverse experiences (*OR* = 6.11, *CI* = 4.10 - 9.12). Moreover, Soldiers who had a deployment history and had more adverse childhood experiences were 5.6 times more likely to experience depression (*CI* = 3.53 – 9.03) (Cabrera et al., 2007). However, resilience was found by Pietrzak, Johnson et al. (2010) to be negatively associated with depression symptoms in a group of National Guard and Reserve Soldiers returning from deployment to Iraq ($r = -.57$, $p \leq .001$).

PTSD

It is estimated that at least 18.5% of all Soldier's who deploy will screen positive for PTSD symptoms and approximately 70% to 90% of Soldiers with PTSD also experience major depression after returning from deployment (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Tanielian et al., 2008). In Soldiers and Marines who deployed to Iraq or Afghanistan, about one in eight returned with PTSD (Hoge et al., 2004). However, symptoms of PTSD often do not surface until months after a Soldier returns from deployment, lending to the difficulty in detecting and treating PTSD (Carey, 2010). Researchers have struggled to determine things that place SMs at risk for

PTSD in an attempt to find ways to mitigate them prior to deployment. SMs who have deployed multiple times are more likely to develop PTSD than those who have not deployed or those who only deployed one time (Hoge et al., 2004; Reger et al., 2009). Combat exposure also was related to the development of PTSD; Soldiers who had more direct combat experiences had higher rates of PTSD (Castro, 2009; Hoge et al., 2004; Sharkansky et al., 2000). According to Hoge et al. (2004), Soldiers who were involved in firefights were significantly more likely to develop PTSD ($p \leq .001$). For example, 19.3% of Soldiers who deployed to Iraq and were involved in more than five firefights developed PTSD, whereas only 4.5% of those who were not involved in any firefights developed PTSD (Hoge et al., 2004). Researchers also found that Soldiers who had depression also had a higher rate of PTSD (Kehle et al., 2011; LaPierre et al., 2007; Pietrzak, Russo, Ling, & Southwick, 2011). Furthermore, Soldiers who screened positive for PTSD symptoms were 5.2 times more likely to have suicidal ideations ($CI = 2.2 – 12.3$) (Pietrzak et al., 2011).

Researchers have attempted to determine the role resilience plays in combating PTSD. Peres et al. (2011) examined resilience in policemen and concluded that resilient people had fewer symptoms of PTSD after trauma and were able to use alternative coping strategies to optimize emotional functioning. Several studies have found similar results with military participants (Green et al., 2010; Maguen et al., 2008; Pietrzak, Johnson et al., 2010). Pietrzak et al. (2009) conducted a study examining factors that mediated the effects of deployment in a group of predominately National Guard and Reserve Soldiers. They found resilience to be significantly negatively associated with

PTSD symptoms (r = -.53, $p \leq .001$) and psychosocial difficulties (r = -.40, $p \leq .001$). Green et al. (2010) found similar correlations between resilience and PTSD while studying participants recruited from the Department of Veterans Affairs, many of whom had deployed to Iraq or Afghanistan. In that sample, resilience was significantly negatively related to PTSD (r = -.41, $p \leq .0001$). A descriptive study by Maguen et al. (2008) sampled Active Duty Air Force SMs on the day they were scheduled to deploy to examine the relationship between affectivity and PTSD symptoms prior to deploying. The researchers concluded the majority of participants were most concerned with leaving their families and friends. Positive affect was significantly related to resilience (r = .62, $p \leq .01$) and significantly negatively related to PTSD symptoms (r = -.13, $p \leq .05$) prior to deploying. This study was the first of its kind to present information that examined resilience factors immediately prior to the participants' deployment to Iraq and provided a baseline measure that could be used if the same participants were surveyed upon returning to their duty stations. Researchers have demonstrated that the common characteristics of resilience that protect against PTSD were hopefulness, social support, hardiness, and spirituality (King et al., 1998; Polusny et al., 2009).

Spirituality, Resilience, and Mental Health Symptoms

Spirituality is an awareness of someone or something greater than oneself. Spirituality is commonly described as a transcendence of self that provides meaning related to that which is immeasurable (Connor, Davidson, & Lee, 2003; Greene & Conrad, 2002; Underwood, 2006; Varghese, 2010). Spirituality is more than just going

to church; it is living by standards and beliefs that make you accountable to someone or something larger than self (Koenig, 2008; Labbe & Forbes, 2010; Richardson, 2002; Underwood & Teresi, 2002). Spirituality is a personal experience sometimes connected with formal practices and ceremonies, but spirituality is not specifically associated with an organized religion; it can only be defined by the individual (Koenig, 2008; Miller & Thoresen, 1999). It causes you to value not only being concerned for yourself, but to go beyond the self and care for others (Underwood & Teresi, 2002).

Spirituality plays a role in developing resilience. Spirituality is thought to "fortify" the body, increasing self-efficacy and other resilience characteristics (Richardson, 2002). Spirituality can be a motivating force; a source of struggle that can lead either to growth or decline (Pargament & Sweeney, 2011). A qualitative study conducted by Selby et al. (2009) examined resilience in missionaries who had recently returned from a mission trip in Australia. They found those who were considered resilient described a healthy relationship with God, which they relied upon to get them through hard times. Resilient missionaries also had more stable mental health when returning to the United States. Spirituality may influence resilience by the social support it provides to those who choose to act on their spirituality through participation in religious ceremonies, such as going to church or participating in bible study. The social support that results from spirituality is thought to strengthen resilience and allow for a more positive reintegration experience (Mofidi et al., 2006; Pardini, Plante, Sherman, & Stump, 2000; Selby et al., 2009).

For trauma survivors, resilience is often linked to spirituality because it provides a person with the ability to find hope in times of distress (Greene & Conrad, 2002; Pargament, Smith, Koenig, & Perez, 1998; Williams, 2002). For many, resilience is tied to spirituality and the ability to have hope, which many find either in a spiritual community or in a personal relationship with someone greater than themselves (Richardson, 2002; Werner & Smith, 1992; Williams, 2002). Pietrzak, Goldstein et al. (2010), examined the associations between PTSD symptom clusters (re-experiencing, avoidance, hyperarousal, and dysphoria) and psychosocial functioning in a group of Soldiers who had deployed to Iraq and found that resilience and spirituality were significantly negatively associated with each of the symptom clusters ($p \leq .001$). Dysphoria was most significantly negatively associated with both spirituality and resilience ($r = -.30$, $p \leq .001$; $r = -.56$, $p \leq .001$).

Increasing Resilience

Much of the research about resilience is descriptive. A scanty amount of interventional research has examined the possibility of increasing an individual's level of resilience. Two studies sampled undergraduate students at two different universities and provided intervention classes once a week for four weeks (Dolbier, Jaggars, & Steinhardt, 2010; Steinhardt & Dolbier, 2008). These classes consisted of curricula focused on decreasing stress and increasing coping skills and protective factors, which were thought to increase resilience. The interventions were provided over 4-two hour weekly sessions where the experimental group received training concerning resilience,

responsibility, and meaningful connections. The wait-list control groups did not receive any interventions during this time. The results of both studies demonstrated the intervention was effective for increasing resilience, stress related growth, and coping, while decreasing depressive symptoms. Dolbier et al. (2010) concluded the change in resilience significantly correlated with the change in stress related growth (r = .67, $p \leq .001$). Furthermore, there was a significant change in the degree of growth for the experimental group and a non-significant change for the control group; depressive symptoms were significantly negatively related to resilience and stress related growth from pre-intervention to post-intervention (r = -.33, $p \leq .05$). Additionally, changes in growth did correlate with changes in coping, but the changes were not significant. In the study by Steinhardt and Dolbier (2008), resilience scores, problem solving, and effective coping strategies significantly increased for the experimental group from pre-intervention to post-intervention. The changes in the control group were not significant for any measures. Depressive symptom scores significantly decreased from pre-intervention to post-intervention in the experimental group and slightly increased in the control group. The results of these two studies suggested the interventions provided were effective and increased resilience, stress related growth, and coping, while decreasing depression symptoms in the undergraduate student participants.

Two interventional studies were conducted exploring resilience in the workplace (Liossis, Shochet, Millear, & Biggs, 2009; Waite & Richardson, 2004). Liossis et al. (2009) conducted a longitudinal mixed methods study where they evaluated a previously established workplace intervention to promote the resilience, wellbeing, and

mental health of participants. The research team provided classes over seven weeks regarding topics such as conflict management, stress management, and the power of negative self-talk to an experimental group of government employees (n = 10). A control group (n = 54) also was constructed for comparison from a group of local university alumni who had demographic characteristics similar to the experimental group. On a scale from 1(*no value*) to 5 (*great value*) Liossis et al. (2009) reported that participants in the experimental group had a greater understanding of resilience and how to handle their stress, greater confidence in dealing with work-life issues, and an increased ability to deal with stress in the future. Waite and Richardson (2004) examined the effect of resilience training on the psychospiritual health of employees of a large government organization. The intervention group (n = 73) attended training classes held once a week for five weeks. The control group (n = 77) did not participate in the training but was present at all measurement points. The researchers concluded there were significant differences between pretest and posttest scores on resilience for participants in the experimental group (t = -3.425, $p \leq .01$). There also were significant differences between scores for self esteem (t = -6.557, $p \leq .01$), internal locus of control (t = -6.557, $p \leq .01$), and interpersonal relations (t = -4.368, $p \leq .01$).

Two studies provided interventions thought to increase Soldiers' resilience (Jarrett, 2008; Adams, Camarillo, Lewis, & McNish, 2010). The Professional Provider Resiliency Training program (PPRT) was a five week training program that focused on providing skills to increase resilience and enhance self-care over time. The PPRT was built on Siebert's Resiliency Model, where five key principles are thought to be

indicative of a resilient person: managing health, problem-solving, increasing self-strengths (self esteem, self confidence, and self concept), developing positive response choices, and learning good lessons from difficult situations (Siebert, 2005). These principles were taught through various experiences such as tai chi, meditation, deep breathing exercises, journaling, and other mind-body techniques. At the end of the classes, an end of course survey was conducted using questions created by the researchers. The results from 172 participants demonstrated the majority of the participants found the classes to be valuable (93%). The majority of the participants (95%) found the deep breathing exercise to be most helpful and 96% of the participants said they planned to use some of the techniques learned in the future. Additionally, 90% of the participants reported they were more aware of their personal resiliency after completing the classes. The PPRT was similar to a program reported by Jarrett (2008), who created and conducted a 16 hour training program in Iraq for Soldier medics. The principles of this course also were fashioned using the concepts from Siebert's Resiliency Model (Siebert, 2005). Jarrett (2008) informally asked the Soldiers about the value of the training he provided and reported that Soldiers found the training to be very helpful and it was well supported by Commanders during deployment. Soldiers reported they learned about their own resilience as well as how to recognize and strengthen resilience in fellow Soldiers. Although both programs provided interventions thought to strengthen or increase one's resilience, neither study used empirical measures with valid and reliable instruments to measure the effectiveness of the interventions. Furthermore,

no pre-intervention measures were taken to compare to results post-intervention and there was no control group.

One descriptive, correlational study sampled primarily, but not exclusively, active duty Soldiers (Pickering et al., 2010). The researchers examined the relationships between mental skills and the perception of resilience in individuals assigned as leaders (cadre) in a Warrior Transition Unit (WTU). These cadre members are responsible for maintaining contact with and accountability for SMs who were injured while deployed and because of their injuries were subsequently assigned to the WTU. The cadre assigned to the WTU work in a challenging environment because they continually witness the effects of the mental and physical injuries of SMs assigned to that unit. The researchers concluded that strong mental skills such as competitiveness, confidence, and staying positive contributed to the resilience of WTU cadre members.

Chapter Summary

Resilience is the inner force that drives individuals to dig deep within themselves to find the strength needed to overcome negative situations (Richardson, 2002). It is a product of trait (gender and temperament), state (family, community, society, and culture), and personal qualities (spirituality). These products supposedly all work together to build resilience. Characteristics of resilience include internal factors such as gender, temperament, self-esteem, hardiness, optimism, personal control, and self-efficacy. External factors such as having a supportive home environment, an adult mentor, social support, friendships with well-adjusted peers, as well as cultural

influence help strengthen resiliency. Research has demonstrated that resilience is both a trait that one is born with and a state that must be nurtured in order to be effective, despite negative circumstances. Additionally, research findings support the premise that resilience can be developed and strengthened throughout the lifespan.

Resilience characteristics supposedly help protect against developing mental health symptoms such as anxiety, depression and PTSD. A scanty amount of interventional research has examined increasing an individual's level of resilience and results show that resilience might be increased by providing interventions focused on decreasing stress, conflict management, and affective coping. However, the interventional studies that involved active duty Soldiers did not use valid and reliable instruments and no pre- or post-intervention measures were taken for comparison and to validate the effectiveness of those interventions. Furthermore, no research has been found in the literature that prospectively examines resilience exclusively sampling enlisted and junior NCO's who are on Active Duty. These Soldiers typically believe they will be stigmatized by their peers and commanders if they seek mental health treatment. Although military leaders have attempted to change the culture of the military by creating resiliency programs, there is no empirical evidence that resilience is related to the mental health of active duty Soldiers. Moreover, no research has examined the relationship between spirituality and resilience in this same population. The proposed research will help answer important questions concerning the relationships between resiliency, spirituality, and mental health symptoms among active duty Soldiers who have recently returned from deployment. Castro (2009) summed up

the complexity of mental health issues in Soldiers that may result from deployment with the following statement:

> This is also unsurprising that the longer you are deployed, the more likely you are to be exposed to the horrors of combat, and therefore you're more likely to screen positive for a mental health problem. But you're also more likely to have relationship problems, you're more likely to have other types of mental health issues, just related to deployment itself that has little or nothing to do with combat. (p. 260)

CHAPTER 3

METHODOLOGY

This chapter describes the research methodology that was used to determine if there was a relationship between resilience, spirituality, life events, disruptions, demographics and mental health symptoms in active duty Soldiers with a deployment history. A description of the research design, sample and selection criteria, procedures for data collection, processes to ensure the protection of human subjects, instruments and their related psychometric properties, and data analysis procedures are presented.

Research Design

A prospective, descriptive, correlational, cross-sectional survey design was used for this study to determine the relationship between resilience and mental health symptoms in active duty Soldiers and what influence if any, spirituality, life events, demographic characteristics, personal history, and deployment have on Soldiers' resilience. Descriptive correlational research is used when researchers are not aware of the relationships or of the strength of the relationships between variables (Wood & Ross-Kerr, 2006). According to Polit and Beck (2008), descriptive correlational research is appropriate for studies that attempt to determine and describe relationships between variables, making it suitable for use in this study.

Descriptive, correlational, cross-sectional research was appropriate for this study for numerous reasons. Although studies have been conducted examining resilience in National Guard or Reserve Soldiers, a sparse amount of quantitative research has been found that prospectively examined psychological resilience in Active Duty enlisted Soldiers and junior NCOs with a deployment history. Furthermore, no studies were found that examined the relationship between spirituality and resilience in the active duty Soldier population. Therefore, descriptive correlational research was appropriate for determining if relationships existed between resilience and mental health symptoms and what influence if any, spirituality, life events, demographic characteristics, personal history, and deployment have on Soldiers' resilience.

Sample and Selection Criteria

Sample

A convenience sample of 350 Active Duty junior enlisted and Non-Commissioned Officers (NCOs) who were within a 6 - 12 month timeframe from returning from deployment to Iraq or Afghanistan and stationed at Fort Campbell were recruited to participate in this study. Fort Campbell services the third largest military population in the Army and is home to the Army's only Air Assault Division in the world, the 101st Airborne Division-Air Assault and four Brigade Combat Teams (BCTs), including two very prestigious Special Operations Command units (Special Forces/Green Berets). The BCT is the basic deployable combat unit in the Army

capable of operating against threats anywhere in the world (Department of the Army Field Manual [FM] 3-90.6, 2010). Fort Campbell Soldiers have a mission to rapidly deploy anywhere in the world; they are considered the "most-deployed contingency forces" in the Army (Fort Campbell Homepage, 2010). They are often the first on the ground and tend to deploy numerous times, as the mission demands. Additionally, they are responsible for sustaining combat operations. These demands place great stress on Soldiers. In May of 2009, Fort Campbell had the highest rate of Soldier suicides in the Army; an average of one Soldier per week (Hall, 2009). The 4th BCT of the 101st Airborne Division (about 5,000 Soldiers) were deployed to Afghanistan and returned to Fort Campbell in February 2011. Soldiers were recruited from this population.

Selection Criteria

The inclusion criteria were: (a) active duty Soldiers in the rank of Private (E-1) to Sergeant (E-5), (b) between the ages of 18 and 35 years, and (c) within 6 – 12 months of returning from deployment to Iraq or Afghanistan. Soldiers between the ages of 18 and 35 years who have deployed are more likely to experience anxiety, depression, and PTSD symptoms, which increases their risk for suicide (Kaplan, Huguet, McFarland, & Newsom, 2007; National Institute of Mental Health, 2010). Furthermore, Soldiers are at highest risk for experiencing PTSD symptoms 6 - 12 months after returning from deployment (Carey, 2010). Additionally, the diagnostic criteria for chronic PTSD and delayed onset PTSD occur at 6 months (APA, 2000).

Soldiers injured while deployed and those who are currently undergoing mental or physical health care related to their injuries were excluded from this study. Research indicated that service members (SMs) injured during their combat experiences had higher rates of PTSD, above and beyond the normal readjustment difficulties (Grieger et al., 2006), and therefore goes beyond the focus of this study.

Power Analysis

A power analysis was calculated to determine appropriate sample size using Power Analysis and Sample Size (PASS 11) statistical software. PASS is the most reliable software for calculating sample size when planning to use regression analyses, the highest level of analysis possible in this study (personal communication, January, 18, 2011). The level of significance was set at $p = .05$. The power was set at .80. Effect size was determined by examining studies conducted with National Guard and Reserve Soldiers. The majority of these studies had medium to large effects sizes (Green et al., 2010; Pietrzak, Johnson et al., 2010; Pietrzak et al., 2009; Polusny et al., 2009). For the purposes of this study, a medium effect size was used and was set at $r^2 = .13$ (Miles & Shevlin, 2010). Using these estimates, a sample size of 284 Soldiers was needed. Oversampling (up to 350 Soldiers) will take place to account for missing data, unusable surveys, and to ensure that an appropriate number of Soldiers are surveyed to achieve the desired power.

Data Collection Procedures

Prior to data collection, the Institutional Review Boards from both Brooke Army Medical Center and the University of Texas at Austin reviewed and approved this study. Study participants were recruited from the Soldier Readiness Center during their post-deployment health re-assessment (PDHRA). The PDHRA is a mandatory program made where all SMs, Department of Defense civilian employees, and contractors are screened for physical and mental health concerns 90 to 180 days after returning from deployment (Department Health Clinical Center, [DHCC], 2011). Furthermore, to decrease the potential for coercion or intimidation of junior military enlisted personnel who are used to complying with instructions and directions from authority figures, the researcher, who is Active Duty military, addressed Soldiers in civilian clothes without evidence of rank or military affiliation.

The Health Promotion Officer (HPO) for Fort Campbell coordinated approval from the command group of the 4th BCT. Once Soldiers agreed to participate, the researcher reinforced the confidential nature of the study and stressed that participants' identities would remain anonymous and therefore they did not need to provide their names or other identification; completion of the survey booklet indicated consent. Participants were given a pen and survey booklet and were escorted to a private area to sit and complete the survey. If they desired more privacy, another area within the building was made available for Soldiers to sit and complete the survey.

The survey booklet contained seven instruments: (1) Demographic Survey, (2) Connor-Davidson Resilience Scale, (3) Deployment Risk and Resiliency Inventory (DRRI), (4) Daily Spiritual Experiences Scale, (5) Generalized Anxiety Disorder-7, (6) Center for Epidemiological Studies Depression Scale, and (7) Post-Traumatic Stress Disorder Checklist-Military Version (see Appendix A for instruments). There were a total of 268 questions that took an average of 30 minutes for participants to complete. Once participants returned their survey booklets, they were provided a business card containing the name, phone number, and email address of the researcher (see Appendix B) and a resource list with telephone numbers of behavioral health resources at Fort Campbell (see Appendix C). The researcher was available to address any questions or concerns that were raised during the study.

Protection of Human Subjects

Privacy and confidentiality of participants

As previously mentioned, the Institutional Review Boards from both Brooke Army Medical Center and the University of Texas at Austin reviewed and approved the study to ensure the protection of human subjects. The HPO introduced the study to Soldiers during their PDHRA orientation and directed potential participants over to the researcher's area. The researcher, who is an Active Duty military officer, did not wear a military uniform nor provide any evidence of association with the military in order to avoid coercion or undue influence on study participants.

Participants were informed that their participation in the study was strictly voluntary and their identity would remain anonymous and all information would be kept confidential except in cases where the participant was in obvious distress or requested to be seen by Behavioral Health. In these cases, the participant would be escorted to the Behavioral Health where he or she would be further evaluated by the Behavioral Health staff.

Potential Benefits

There are no potential benefits for Soldiers who participate in this study. However, information gained from the study may benefit all military SMs who are returning from deployment.

Potential risks were minimal. Participants may have experienced minor emotional discomfort related to disclosure concerning certain survey questions that caused them to recall prior traumatic events. If any of the participants appeared to become emotionally distraught, they would be asked if they wished to halt completion of the survey and the researcher would escort them to the Behavioral Health screening table at the PDHRA screening site. If they refused, they would be given a card with the numbers for Behavioral Health and the Chaplain and will be encouraged to follow up as needed.

A potential burden may be encountered related to the time it took to complete the survey booklet. It is estimated to take 30 – 45 minutes to complete the survey booklet, but participants were given as much time as they need. No invasive procedures

were required in this study. It is believed the potential benefits of participating in this study outweighed the potential risks.

Confidentiality of the research data

Completed survey booklets were maintained by the researcher at all times. Only the researcher and her faculty advisor had access to the data records; and electronic data records were password protected. Each survey booklet was numbered for the purpose of identifying the number of booklets distributed. This number became the identification code number used in the electronic database. The researcher coded and entered the data for analysis. After the data were entered, the survey booklets were destroyed in accordance with San Antonio Military Medical Center (SAMMC; formerly named Brooke Army Medical Center [BAMC]) policies. The electronic database and storage devices will be maintained for two years in a locked filing cabinet by the researcher. After two years, these devices will be destroyed in accordance with SAMMC policies. The data will be reported as aggregate data when results of the study are published.

Instruments

Demographic and Personal History Questionnaire

The demographic, social, and health history is a 17-item instrument developed for use in this study by the researcher. The instrument was designed to collect essential demographic characteristics and personal history of the participants. The demographic questions included: gender, age, rank, grade, number of years in the military, race,

marital status, number of children under the age of 18 years living at home, highest education level, and religious affiliation. The personal history questions included questions about deployment experiences and resilience training. They included: deployment to Iraq since 2001, deployment to Afghanistan since 2001, injuries sustained while deployed, current physical or mental healthcare, pre-deployment resilience training, and post-deployment resilience training. The final question asks if deployment was viewed as a disruption to the participant. This question was added after an extensive discussion with a senior researcher regarding the nature of being in the military and deploying. While some may view deployment as part of the job description of SMs, the timing of the deployment and restrictions placed on SMs during a deployment may cause disruptions in their lives and those of their family members. This question was used to determine if Soldiers did indeed view deployment as a disruption.

Connor-Davidson Resilience Scale

The Connor-Davidson Resilience Scale (CD-RISC) is a 25-item self-report survey developed in 2003 to quantify resilience. The scale is based on experiences from the previous month and was developed for use in the general population. Scores are based on adding the total of each item, which is scored using a 5-point Likert scale where 0 = "*Not true at all"* to 4 = "T*rue nearly all the time."* Total scores range from 0-100, where higher scores indicate greater levels of resilience. Five factors resulted from the initial development of the scale (Connor & Davidson, 2003) and have been subsequently corroborated by Pietrzak et al. (2009): (1) personal competence, high

standards and tenacity; (2) trust in instincts, tolerance of negative affect, and strengthening effects of stress; (3) accepting change and secure relationships; (4) concerns control; and (5) spirituality.

The CD-RISC has been validated in adults in several different studies (Green et al., 2010; Karairmak, 2010; Lamond et al., 2008; Pietrzak et al., 2009; Roy, Sarchiapone, & Carli, 2007). Roy et al. (2007) conducted a study of substance abusers and showed that those who had made previous suicide attempts scored lower on the CD-RISC than those who had never attempted suicide (49.8 vs 62.7, $p \leq .001$). Pietrzak et al. (2009) found that Soldiers who had higher levels of depression and PTSD had lower resilience scores (59.5 vs 77.4, $p \leq .001$). The alpha reliability coefficient for that study was .94.

Conversion validity was established during initial development by correlating the CD-RISC with the Kobasa Hardiness Scale ($r = .83$, $p \leq .001$); Perceived Stress Scale ($r = -.76$, $p \leq .001$); Stress Vulnerability Scale ($r = -.62$, $p < .001$); and Sheehan Social Support Scale ($r = .36$, $p \leq .001$) (Connor & Davidson, 2003). Wilks (2006) conducted a study of Alzheimer's disease caregivers and found a correlation between Hodge's Intrinsic Spirituality Scale and the CD-RISC ($r = .53$, $p \leq .001$). Additionally, Lee et al. (2008) found that CD-RISC scores significantly predicted traditional Western spirituality in a sample of over 1900 adults in the general population ($\beta = .08$, $p \leq .001$). Maguen et al. (2008) conducted a study of Air Force medical personnel and found their CD-RISC scores significantly correlated with positive affect on the Positive

and Negative Affectivity Schedule (r = .62, $p \leq .01$). The alpha coefficient in that study was .92.

Steinhart and Dolbier (2008) conducted an intervention study with a group of college students using the CD-RISC. The researchers randomly assigned students to a wait list control group (n = 27) or an experimental group (n = 30) that received a four week course designed to increase their level of resilience. Steinhart and Dolbier (2008) reported acceptable test-retest reliability where there was no change in the CD-RISC scores in the wait list control group over a four-week period (M = 70.56 and 70.59). The alpha coefficient in that study was .89.

Deployment Risk and Resiliency Inventory (DRRI)

The Deployment Risk and Resiliency Inventory (DDRI) was developed by King, King, and Vogt (2003) in collaboration with the Department of Veterans Affairs and the Department of Defense to measure psychosocial risk and resilience factors common to military personnel and veterans deployed to war zones or other hazardous environments. The instrument contains 14 subscales that are divided into three main categories: pre-deployment factors (prior stressors and childhood family environment), deployment/war-zone factors (sense of preparedness, difficult living and working environment, concerns about family and life disruptions, deployment social support, sexual harassment, general harassment, perceived threat, combat experiences, exposure to the aftermath of battle, and self-reports of nuclear, biological, and chemical [NBC] exposures), and post-deployment factors (post-deployment social support, post-

deployment stressors). Subscales can be used individually or in total depending on the needs of the study. The ten subscales used for this study were: Section A: Pre-deployment Life Events; Section B: Childhood Experiences; Section D: Deployment Environment; Section E: Life & Family Concerns; Section F: Unit Support; Section G: Relationships within Unit; Section H: Deployment Concerns; Section J: Post-Battle Experiences; Section L: Post-Deployment Support; and Section M: Post-Deployment Life Events. See Table 1 for psychometrics of subscales used in this study.

The DRRI had acceptable test-retest reliability over a one month period with alpha coefficients that averaged 0.86 (King, King, Vogt, Knight, & Samper, 2006). The DRRI scales were internally consistent for both telephone and mail forms of administration and demonstrated associations with key health outcomes such as PTSD, depression, anxiety, and general mental health outcomes. Of the 14 subscales, 12 had alpha coefficients greater than .80. The two subscales that had coefficients less than .80 were Subscale A: Prior stressors (.75) and Subscale M: Post-deployment stressors (.72). King et al. (2003) noted that responses to the items on one subscale may be considered causal indicators on the subsequent subscale. Therefore co-variation among those items was not expected to be high and internal consistency reliability estimates would be less than expected for other subscales.

Vogt, Proctor, King, King, and Vasterling (2008) validated scales from the DRRI in a sample of 638 Operation Iraqi Freedom (OIF) Army Soldiers who were all within 95 days of returning from deployment. Overall, the results supported the use of

TABLE 1.

Psychometrics of DRRI Subscales

Subscale	Purpose	No. of Items	*Response Format*	Scoring	Alpha
A: Pre-Deployment Life Events	To measure exposure to traumatic events prior to deployment	17	Dichotomous (0 = *No*; 1 = *Yes*)	Range: 0-17 For items 14 & 15, if *no* = 0; If *yes* and only one of the two options in 14a & 15a is circled = *1*; if yes and both options are circled = *2* Higher scores = more exposure to pre-deployment stressors.	.75
B: Childhood Experiences	To measure quality of life and closeness among family members early in life	15	5-point Likert Scale (1 = *Almost none of the time* to 5 = *Almost all of the time)*	Range: 15-75 Rev Score 2, 3, 6, 8-10, 14, & 15 Higher scores = greater cohesion and closeness among family members	.92
D: Deployment Environment	To measure exposure to events or circumstances representing day-to-day challenges related to living in the war zone	20	5-point Likert Scale (1 = *Almost none of the time* to 5 = *Almost all of the time)*	Range: 20-100 Rev Score 3, 4, 7, 8, 10, 12, 13, 17, & 19 Higher scores = more difficult environment	.89
E: Life and Family Concerns	To measure concerns about how deployment might affect other important areas of life	14	4-point Likert scale (1 = *Not at all* to 4 = *A great deal)* *If 0, recode to 1*	Range: 14 -56 Higher scores = more concerns about life and family disruptions	.89
F: Unit Support	To measure the amount of assistance and encouragement in the war zone from unit leaders and other unit members	12	5-point Likert scale (1 = *Strongly disagree* to 5 = *Strongly agree*)	Range: 2-60 Higher scores = greater perceived support and cohesion	.94

Table 1 Continued:

Psychometrics of DRRI Subscales

Subscale	Purpose	No. of Items	Response Format	Scoring	Alpha
G: Relationships within Unit	Questions 1-7 measure exposure to harassment that is non-sexual but may occur based on ones gender or ethnicity; questions 8-14 measure exposure to unwanted sexual touching or verbal comments from other unit members while deployed	7 = general harass-ment 7 = sexual harass-ment	4-point Likert scale (1 = *Never* to 4 = *Many times*)	Range: 7-28 on general harassment 7-28 on sexual harassment Higher scores = more harassment	.92 (general harass-ment) .86 (sexual harass-ment)
H: Deployment Concerns	To measure the level of fear for one's safety and well-being while deployed	15	5-point Likert scale (1 = *Strongly disagree* to 5 = *Strongly agree*) with scores ranging from 15 to 75	Range: 15-75 Rev Score 2 & 8 Higher scores = more perceived threat to one's safety and well-being	.89
J: Post-Battle Experiences	To measure exposure to consequences of combat	15	Dichotomous items (0 = *No*; 1 = *Yes*)	Range: 0-15 Higher scores = greater exposure to consequences of combat	.89
L: Post-Deployment Support	To measure the extent that family, friends, coworkers, and community provide emotional support and assistance when the Soldier returns from deployment	15	5-point Likert scale (1 = *Strongly disagree* to 5 = *Strongly agree*)	Range: 15-75 Rev Score 6 & 8 Higher scores = greater perceived social support when returning from deployment	.87
M: Post-deployment Life Events	To measure exposure to stressful life events after deployment such as motor vehicle accidents, physical assault, death or serious illness of someone close to the Soldier, and difficulties reestablishing family and community roles	17	Dichotomous items (0 = *No*; 1 = *Yes*)	Range: 0-17 Higher scores = more exposure to life stressors after returning from deployment	.72

the DRRI subscales with this population. Additionally, Vogt et al. (2008) suggested the scores for the post-deployment stressors subscale also may have been lower in this sample because of the time the study was conducted; thereby not giving them adequate time or opportunity to have experienced many of the stressors measured with this subscale.

Daily Spiritual Experiences Scale

The Daily Spiritual Experiences Scale (DSES) is a 16-item scale designed to measure spiritual experiences as they are expressed in daily life. Underwood and Teresi (2002) defined spirituality as a concern with the transcendent; addressing the meaning of life, assuming that there is more to life then we can see or hear. Although many aspects of spirituality include religiosity, they differ in that religiosity concerns the specific denominational characteristics of religious experiences and spirituality addresses the meaning of life, assuming there is more to life than we can see or hear (Underwood, 2006). Spirituality is more than going to church; it is living by standards and beliefs that make you accountable to that someone/something larger than self. The scale includes concepts such as awe, gratitude, mercy, compassionate love, and a desire for closeness to God.

The first 15 items listed in the scale are reversed scored using a 6-point Likert scale where responses range from 1 (*never or almost never*) to 6 (*many times a day*). The last item asks "*In general, how close do you feel to God*?" and has four possible responses: *not close at all, somewhat close, very close, and as close as possible*. This

item uses a 4 point Likert scale, reverse scored from 1 (*as close as possible*) to 4 (*not close at all*). All Item scores are added together; scores range from 16 to 94 with higher scores indicating more frequent daily spiritual experiences. While the term "God" is used throughout the scale, respondents are given the following instructions: "*A number of items use the word God. If this word is not a comfortable one for you, please substitute another idea which calls to mind the divine or holy for you*." This allows for respondents to add the name or title they give to their highest being. For example, when the DSES was used with a group of Afghan refugees, the term "Allah" was used instead of "God" when answering the survey (Underwood, 2011). The DSES was chosen because of this flexibility, making it appropriate to use with a military population that is made up of Soldiers from different cultures with various spiritual beliefs.

Items for the DSES were developed through in-depth interviews and focus groups with participants of many different religious denominations and perspectives. Additionally, the author of the scale studied many theological and devout writings seeking validation for the different factors and to confirm what specific items were asking (Underwood & Teresi, 2002). Finally, the list of items was presented and revised through semi-structured interviews at a meeting that included a group of theologians, agnostics, and atheists at the World Health Organization Working Group on Spiritual Aspects of Quality of Life. Underwood and Teresi (2002) reported moderate to high intercorrelations between items with correlations on 13 of the 15 items at .68-.93 and two items had low correlations with the other items (.27 and .33).

Reliability estimates were based on two studies conducted: The Study of Women across the Nation (SWAN) and the Loyola University study. Researchers from both studies conducted a serious of analyses of the DSES and reported high internal consistencies, yielding Cronbach's alphas between .94 and .95 (Underwood & Teresi, 2002). The DSES was validated in the SWAN study where African American women were found to have a greater degree of daily spiritual experiences than Caucasian women (M = 37.78 vs 52.79; t = 6.82, $p \leq .01$). This finding was corroborated by Ellison and Fan (2008) when studying aspects of the DSES that may buffer or moderate against effects of stressful life events and personal well-being. The DSES also correlated with several other measures of psychosocial and health-related factors. It significantly positively correlated with Scheirer's Optimism Scale (r = .35, $p \leq .01$) and Berkman's scale of Perceived Social Support (r = .18, $p \leq .01$). Furthermore, the DSES was statistically significantly negatively correlated with alcohol consumption (r = -.20, $p \leq .01$), the State-Trait Anxiety Inventory (r = - .39, $p \leq .01$), and the Center for Epidemiological Studies-Depression scale (r = -.22, $p \leq .01$).

Generalized Anxiety Disorder-7

The Generalized Anxiety Disorder 7 (GAD-7) scale is a 7-item scale that evolved from retaining the seven items that correlated with the seven core symptoms of generalized anxiety disorder on the 13-item GAD scale (Spitzer, Kroenke, Williams, & Lowe, 2006). The GAD-7 is a brief measure that reflects symptoms of anxiety experienced in the past two weeks. Anxiety, as measured by the GAD-7, is based on

(DSM-IV) criteria for generalized anxiety disorder and other symptoms common in other anxiety scales. The GAD-7 is scored using a 4-point Likert scale where responses range from 0 (*Not at all*) to 3 (*Nearly every day*) and scores range from 0-21; scores 5 – 9 are indicative of mild anxiety disorder; 10 - 14 are indicative of moderate anxiety disorder; and 15 – 21 are indicative of severe anxiety disorder symptoms.

Spitzer et al. (2006) reported that internal consistency of the GAD-7 was excellent, with Cronbach's alpha of .92. The GAD-7 had good convergent validity and correlated with the Beck Anxiety Inventory (r = .71), the anxiety subscale of the Symptom Checklist-90 (r = .74), and the Hamilton Anxiety scale (r = .85) (Ruiz et al., 2011; Spitzer et al., 2006). Construct validity was reported by Spitzer et al. (2006), where scores on the GAD-7 were strongly associated with multiple domains of functional impairment. Furthermore, Ruiz et al. (2011) found that participants who scored higher on the GAD-7 had significantly more visits to their primary care providers then those who lower scores (1.3 vs .9, $p \leq .001$). According to Lowe et al. (2008), the GAD-7 is applicable in men and women, as well as in older and younger subjects, making it appropriate to use in the current study of Soldiers.

Center for Epidemiological Studies Depression Scale

The Center for Epidemiological Studies Depression Scale (CES-D) is one of the most widely used scales for measuring depression (Breslau, 1985; Irwin, Haydart, & Oxman, 1999; Shean & Baldwin, 2008). The 20-item screening tool was developed to help detect different levels of depression symptoms in the general population. It

includes items about feelings of worthlessness, hopelessness, loneliness, sleep disturbance, and concentration problems (Radloff, 1977). The CES-D measures depression symptoms experienced in the past week on a 5-point Likert scale where responses range from 0 (*rarely or none of the time*) to 3 (*most or* a*ll of the time*). Scores range from 0-60 with higher scores indicating more depression symptoms. A score between 16 and 23 is indicative of having moderate depression symptomatology and greater than 24 is an indication of severe depression symptomatology. However, the CES-D is not a diagnostic tool; it can only used to assess depression symptoms.

The reliability and validity of the CES-D has been reported for many different populations and cultures (Cho & Kim, 1998; Clark, Aneshensel, Frerichs, & Morgan, 1981; Radloff, 1977; Roberts, 1980). Radloff (1977) reported an internal consistency of .85 in the general population and .90 in a sample of patients. This range was consistently found across studies with multiple cultures (Clark et al., 1981; Roberts, 1980). The test-retest reliability was reported to be between .51 and .67 for a two and eight week period of time (Radloff, 1977). The CES-D has good convergent validity in that it significantly correlates with the Beck Depression Inventory-II ($r = .86$, $p \leq .001$) (Shean & Baldwin, 2008) and the Patient Health Questionnaire depression scale ([PHQ-9], $r = .77$, $p \leq .05$) (Milette et al., 2010).

Post-Traumatic Stress Disorder Checklist – Military

The Post-Traumatic Stress Disorder Checklist-Military Version (PCL-M) is a 17-item self-administered rating scale used to screen for PTSD in military SMs (Keen,

Kutter, Niles, & Krinsley, 2008; Weathers, Litz, Herman, Huska, & Keane, 1993). The PCL-M was designed to capture one of three distinct clusters of symptoms representing the B (re-experiencing), C (avoidance or numbing), or D (hyper-arousal) diagnostic criteria described for PTSD in the *Diagnostic and Statistical Manual of Mental Disorders,* fourth edition (APA, 2000). The PCL-M measures specific traumatic events or occurrences common in a military environment that triggered PTSD symptoms in the past month. Respondents rate the severity of symptoms on a 5-point Likert scale ranging from 0 = "*Not at all*" to 4 = "*Extremely*." Scores were derived by summing the weighted frequencies for all items marked. A total score of 50 or higher indicated a positive screening for PTSD symptoms (Weathers et al., 1993).

The PCL-M is considered a valid and reliable instrument. Internal consistency for the overall scale is reported to be .94 (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996) and .97 (Weathers et al., 1993). Internal consistency for items measuring re-experiencing (Criterion B) were reported as .94; items measuring avoidance or numbing (Criterion C) were .82; and items measuring hyper-arousal (Criterion D) were .84 (Blanchard et al., 1996). Pietrzak et al. (2009) reported internal consistency at .96 with a group of 272 predominately National Guard and Reserve Soldiers. Convergent validity was found between the PCL-M and other clinician-administered instruments used to diagnose PTSD, such as the Clinician-Administered PTSD Scale (CAPS) (.93) (Blanchard et al., 1996) and the Mississippi Scale (.93)

(Weathers et al., 1993). Furthermore, test-retest reliability over a 2-3 day period was reported at .96 in a group of Vietnam war veterans (Weathers et al., 1993).

Data Analysis

Statistical analyses were performed using the Statistical Package for Social Sciences (SPSS for Windows, version 18.0) software. Each survey entry was re-verified for errors by the researcher. Additionally, an independent reviewer rechecked data entry on 10 percent of the survey booklets (32 booklets) and zero errors in data entry were observed. Descriptive statistics including frequencies and measures of central tendency were used to summarize all demographic and study variables, as appropriate. For all analyses in this study, the level of significance was set at $p \leq .05$.

Missing data is a common issue in research, especially when using self-report instruments (Buhi, Goodson, & Neilands, 2008; Fox-Wasylyshyn & El-Masri, 2005). For this study, missing data was handled using the imputation technique case-mean substitution. According to Fox-Wasylyshyn and El-Masri (2005), imputation involves replacing missing data with estimates based on the values of other items. Case-mean substitution assumes that scores from the subjects' mean score are closely related and positively correlated. This technique takes the mean of the subjects score and substitutes the mean of that data for the missing data. This imputation technique is appropriate when less than 20% of the data is missing (Roth, Switzer, & Switzer, 1999). If greater than 20% of the data is missing on any survey in this study, that survey was deleted. Additionally, if any of the surveys measuring key variables (resilience, spirituality, and

mental health outcomes) had greater than 20% of the data missing, the entire survey booklet was deleted. Five survey booklets met this criteria and were deleted.

Using SPSS, exploratory analyses were conducted to examine distributions, measures of central tendency, outliers, and to test assumptions (Field, 2009). Scatterplots confirmed the linear relationships between the variables. Histograms, skewness, and kurtosis were examined and there was violations of normality within some of the key variables. Both log transformations and square root transformations were conducted, however the results of the transformations remained the same therefore all analyses were conducted using the original data. Furthermore, assumptions of homoscedasticy were examined and bivariate correlational analyses were employed to answer the four research questions:

1. What is the strength of the relationship between resilience and mental health symptoms (anxiety, depression, and PTSD)?

2. What is the strength of the relationship between spirituality and resilience?

3. What are the relationships between life events and resilience?

4. What are the strengths of the relationships between resilience, spirituality, life events, disruptions due to deployment, demographic characteristics, personal history, and mental health symptoms?

Correlational analyses can be used to determine if variables are related to each other and the analyses require at least a three-point ordinal scale for testing (Wood & Ross-Kerr, 2006; Munro, 2005). The Pearson Product Moment Correlation (*r*) is the

most commonly used test of correlation (Munro, 2005). It is a measure of association that ranges from +1 (positive relationship) to -1 (negative relationship) (Wood & Ross-Kerr, 2006). According to Munro (2005), correlations for most psychosocial variables are between .20 and .40; .70 is considered a high correlation. For this study, if the correlations are of significant strength ($r \geq .40$), regression will be employed. These variables were entered in a forward, stepwise regression model whereby the variable with the highest correlation was entered first.

Descriptive statistics were examined to describe demographic characteristics such as gender, age, rank, grade, years in the military, race, marital status, number of children living in home, education, and religious affiliation. Additionally, descriptive statistics were studied to examine the different descriptions of deployments, and Soldiers views on resiliency training. Prior to further analyses, age data was recoded into grouped ages and religious affiliation was regrouped to decrease from nine groups to five groups.

Summary

This chapter detailed the methodology used in this descriptive correlational study to determine the relationship between resilience and mental health symptoms and to determine what relationship, if any, spirituality, life events, demographic characteristics, personal history, and deployment have on Soldiers' resilience. The setting, inclusion, and exclusion criteria for sample selection, and the power analysis were presented. Procedures for data collection, as well as methods for protecting both

the identity and confidentiality of the participants and the data were described. The seven instruments used to develop a survey booklet were presented along with their psychometric properties. Finally, the data analysis plan that was used to provide answers to the four research questions was articulated.

CHAPTER 4

FINDINGS

This chapter discusses the quantitative results of the data analyses performed in this study. Using SPSS 18.0, the demographic characteristics and descriptive statistics for the sample are presented. Bivariate correlational analyses were conducted to examine each of the four research questions. Variables with correlations greater than .40 were further analyzed using regression analyses.

Sample Description

A convenience sample of active duty junior enlisted and Non-Commissioned Officers (NCOs) who were within 6 -12 months from returning from deployment to Iraq or Afghanistan were recruited from Fort Campbell Kentucky to participate in this study. The inclusion criteria were: (a) active duty Soldiers in the rank of Private (E-1) to Sergeant (E-5), (b) between the ages of 18 and 35 years, and (c) within 6 – 12 months of returning from deployment to Iraq or Afghanistan. These Soldiers have a mission to rapidly deploy anywhere in the world; they are considered the "most-deployed contingency forces" in the Army (Fort Campbell Homepage, 2010). Soldiers injured while deployed and those who were undergoing mental or physical health care related to their injuries were excluded from this study. Research has indicated that SMs injured during their combat experiences had higher rates of PTSD, above and beyond the

normal readjustment difficulties (Grieger et al., 2006), which goes beyond the focus of this study. Three hundred and fifty Soldiers from the 4th Brigade Combat Team (BCT) initially agreed to participate in the study. Forty six participants were excluded because they did not meet the inclusion criteria resulting in 304 survey booklets. Additionally, five participants were excluded because they did not complete one or more of the individual surveys. Therefore, 299 participants were included in the final sample. Demographic characteristics of the sample are summarized in Table 2.

Participants ranged in age from 19 to 35 years (M = 25.24, SD = 3.96) with the majority of them (65%) between 19 and 26 years of age. The vast majority of the sample was male (95%, n = 284) and identified their race as Caucasian (72%, n = 213). Forty nine percent of the participants reported the highest level of education attained as high school (n = 133). Most participants reported being married (52%, n = 154), however, 64% of the sample did not have any children under 18 years of age living in their household (n = 194). When participants were asked to identify which religious group they affiliated with, 23% identified themselves as Baptist (n = 68), 20% were Catholic (n = 60), and 13% were Atheist or reported no affiliation (n = 38). Fifty seven percent of the sample were Specialist (E-4) (n = 171), while 28% were Sergeants (E-5) (n = 84). Additionally, the participants' years of military service ranged from 1 – 14 years (M = 4, SD = 3).

Table 2.

Demographic Characteristics

	Mean	SD	Frequency	%
Age	25	4.0		
18-20			25	8%
21-23			96	32%
24-26			74	25%
27-29			54	18%
30-32			30	10%
33-35			20	7%
Race				
Caucasian			213	72%
African American			32	11%
Hispanic			31	10%
Other			23	7%
Marital Status				
Single			119	40%
Married			154	52%
Separated			10	3%
Divorced			16	5%
Children <18 yrs in home	1	1		
0			194	65%
1-2			81	27%
3 or more			21	7%
Missing			4	1%
Religious Affiliation				
Baptist			68	23%
Catholic			60	20%
Protestant			36	12%
Christian			19	6%
Atheist/None			38	13%
Other			69	23%
Missing			9	3%
Rank				
Private (E-1)			5	2%
Private Second Class (E-2)			0	0%
Private First Class (E-3)			39	13%
Specialist (E-4)			171	57%
Sergeant (E-5)			84	28%

Table 2. (Continued)

Demographic Characteristics

	Mean	SD	Frequency	%
Years of Service	4	3		
1 – 4			184	62%
5 – 9			90	30%
10 – 14			25	8%

Table 3 depicts the deployment history and personal experiences with resilience training of the participants. All of the participants (100%) had previously deployed to Afghanistan (n = 298), while only 29% of the sample had deployed to both Iraq and Afghanistan (n = 88). Twenty one percent of the sample had deployed to Afghanistan two or more times (n = 63) and the average length of the first deployment to Afghanistan was 11 months (SD = 2.7, n = 298). The total number of months the participants spent deployed throughout their careers ranged from 4 months to 51 months (M = 18, SD = 10).

Since 2008, resilience training was mandatory for Soldiers, however, only 59.8% of the sample completed resilience training (n = 179) prior to deploying and only 63.5% completed the training after returning from deployment (n = 190). Thirty two percent never received any resilience training (n = 95) and of those who completed the training, only 60.2% found the training helpful (n = 121). Some of the positive comments about resilience training included “It helps put things in perspective”; “Gives you an idea of what is to come”; “Useful information”; and “It prepared me for deployment and when I return.” Other comments surrounding resilience training included “It’s more like an assembly line”; “Providers don’t take

TABLE 3.

Deployment Characteristics and Personal History

	Mean	SD	Frequency	%
Deployed to Afghanistan				
No			0	0%
Yes			299	100%
Number of Times Deployed to Afghanistan				
1			236	79%
2			62	20%
3			1	1%
Deployed to Iraq				
No			211	71%
Yes			88	29%
No. of times deployed to Iraq				
0			211	71%
1			56	18%
2			29	10%
3			3	1%
Deployed to Afghanistan and Iraq				
No			211	71%
Yes			88	29%
Total Months Deployed	18	10		
0 – 10			35	12%
11 – 20			159	53%
21 – 30			66	22%
31 – 40			28	9%
41 – 50			8	3%
51 or more			3	1%
Pre-Deployment Resilience Training				
No			114	38%
Yes			179	60%
Missing			6	2%
Post-Deployment Resilience Training				
No			106	36%
Yes			190	63%
Missing			3	1%
If *received* resilience training, did you find resilience training helpful?				
No			77	40%
Yes			112	60%

the time to actually talk to Soldiers"; "I don't need the training; and no one cared enough to make the training useful."

Table 4 shows the measures of central tendency for each of the key variables of interest. Resilience scores ranged from 24 – 100 (M = 75) where a higher score indicates greater resilience. Of the Soldiers that participated, 91% (n = 273) have a strong sense of purpose in life. Furthermore, over 96% (n = 288) of the participants reportedly think of themselves as strong people when dealing with life challenges and difficulties.

Spirituality scores on the DSES ranged from 16 – 94 (M = 49). Higher scores on the spirituality scale are indicative of greater spiritual experiences. When separated by religious affiliation, Soldiers who identified themselves as Protestant had the highest mean score (M = 57.89, SD = 25.16) whereas those who identified themselves as Atheist or without affiliation scored the lowest (M = 29.68, SD = 14.33). The majority of participants reported that they felt God's presence at least most days (63%, n = 188) and feel God's love through others (65%, n = 195). Only 14% (n = 43) reported they never feel God's presence and 34% (n = 101) reported not at all feeling close to God. Furthermore, at least some days, the majority (62%) reported feeling selfless caring for others and accepting others even when they did things the participants thought were wrong (68%).

Key mental health outcomes were anxiety, depression, and PTSD. Anxiety scores ranged from 0 – 21 (M = 7), where the higher score indicated greater levels

of anxiety in the last two weeks prior to taking the survey; scores 5 – 9 are indicative of mild anxiety disorder; 10 - 14 are indicative of moderate anxiety disorder; and 15 – 21 are indicative of severe anxiety disorder symptoms. Twenty five percent (n = 76) met the criteria for mild anxiety disorder symptoms while 14% (n = 42) met the criteria for severe anxiety disorder symptoms. Although the majority of participants (70.9%, n = 212) met the criteria for minimum to mild anxiety disorder symptoms, 71% (n = 212) also reported they had trouble relaxing several days or more including 15% (n = 44) who reported having this symptom nearly every day. The majority of participants also reported becoming easily annoyed or irritable several days or more (71%, n = 211) including 22% (n = 67) who reported becoming easily annoyed or irritable nearly every day.

Depression scores ranged from 0 – 48 (M = 18), where higher scores were indicative of greater levels of depression in the week prior to completing the survey. A score between 16 and 23 is indicative of having moderate depression symptomatology and greater than 24 is an indication of severe depression symptomatology. Thirty-five percent of the participants had moderate levels of depression symptoms, while 22% had severe levels of depression symptoms. Forty-one percent reported feeling depressed some of the time or more often in the past week. Sixty-nine percent of Soldiers reported at least some of the time they had trouble focusing on what they were doing. Furthermore, 64% (n = 181) reported they had restless sleep at least some of the time. However, the majority of the Soldiers

indicated that they did not *feel* depressed over the past week (58%, *n* = 176), 61% (*n* = 183) rarely felt sad, and 71% (*n* = 211) enjoyed life occasionally or a moderate amount of time to all of the time.

PTSD symptom scores ranged from 0 – 68 (*M* = 17). Higher scores on the PCL-M indicated greater levels of PTSD symptoms in the past month; 5% of the sample (*n* =17) scored 50 or more, meeting DSM-IV criteria for a PTSD diagnosis (APA, 2000). When asked about trouble falling or staying asleep, 66% (*n* = 197) reported having at least a little bit with 21% (*n* = 62) of these answering extremely. Furthermore, 61% (*n* = 182) reported having difficulty concentrating at least a little bit or more of the time.

TABLE 4.

Descriptive Statistics for Key Variables (*N* = 299)

	Possible Range	**Mean**	**Median**	**Standard Deviation**
Resilience	0-100	75.05	76.00	16.15
Spirituality	16-94	48.79	47.00	23.47
Life Events				
Pre-deployment Life Events	0-17	2.96	2.00	2.95
Childhood Experiences	15-75	53.53	55.00	11.32
Mental Health Outcomes				
Anxiety	0-21	6.70	5.00	6.25
Depression	0-60	17.93	17.00	8.95
PTSD Symptoms	0-68	16.94	12.00	16.45

Life events were measured using two scales (the pre-deployment life events scale & childhood experiences). Scores on the pre-deployment life events scale ranged from 0 – 14 (M = 3) where higher scores indicated more life events. Table 5 lists the top five pre-deployment life events experienced by the participants. Scores on the childhood experience scale ranged from 15 – 75 (M = 54). Higher scores on this scale indicated a more cohesive family and positive childhood experiences. The top five childhood experiences endorsed by the participants some of the time to almost all of the time are presented in Table 6.

TABLE 5.

Top Five Pre-deployment Life Events

Before I was deployed, I had…	**Frequency**	**Percent**
the death of someone close to me	130	43.5
been physically injured by another person	73	24.4
a parent who had a problem with drugs or alcohol	71	23.7
seen or heard physical fighting	59	19.7
witnessed someone being assaulted or violently killed	57	19.1

TABLE 6.

Top Five Childhood Experiences

	Frequency	Percent
Family members felt comfortable with each other	272	92
Family members were there for each other during difficult times	260	87
Family members were not afraid to say what was on their minds	266	89
Family members shared household responsibilities	259	87
Family members swore at each other	135	45

Research Question 1

What are the strengths of the relationships between resilience and mental health symptoms (anxiety, depression, and PTSD)? Bivariate correlational analyses were used to determine the strengths of the relationships between resilience and mental health symptoms. See Table 7 for the correlation matrix of these variables; the analysis revealed statistically significant negative relationships between resilience, anxiety, depression, and PTSD symptoms in this sample of active duty Soldiers. Those who scored high on resilience, scored lower on measures of anxiety (r = -.41, $p \leq .001$), depression (r = -.34, $p \leq .001$), and PTSD symptoms (r = -.39, $p \leq .001$). When considered individually, resilience accounted for 17% of the variance in anxiety scores (r^2 = .168), 12% of the variance in depression scores (r^2 = .115), and 15% of the variance in PTSD symptoms (r^2 = .152).

TABLE 7.

Correlation Between Resilience and Mental Health Outcomes (*N* = 299)

	1	2	3	4
1. Resilience	1.00			
2. Anxiety	-.41**	1.00		
3. Depression	-.34**	.71**	1.00	
4. PTSD	-.39**	.78**	.71**	1.00

Note. **Correlation is significant at the 0.01 level (two-tailed); NS = Not Significant
PTSD = Post-Traumatic Stress Disorder symptoms;

Because the correlation between resilience and anxiety was of sufficient strength (>.40), if resilience was not the only variable of interest, it would have been added into a regression model to examine the degree to which resilience predicted anxiety.

Research Question 2:

What is the strength of the relationship between spirituality and resilience? A correlational analysis was conducted to examine the relationship between spirituality and resilience. The Daily Spiritual Experiences Scale (DSES) is the scale used to measure spirituality and higher scores are indicative of greater spiritual experiences (see Table 8). Soldiers who scored higher on resilience scored higher on spirituality ($r = .30$, $p \leq .001$) and spirituality accounted for 9% of the variance between the two variables ($r^2 = .087$). However, because the correlations were of little practical relevance, no further analyses were conducted. See Table 9 for the summary of resilience and DSES scores by religious affiliation.

TABLE 8.

Correlation between Spirituality and Resilience (*N* = 299)

	1	2
1. Resilience	1.00	
2. Spirituality	.30**	1.00

Note. **Correlation is significant at the 0.01 level (two-tailed).

TABLE 9.

Spirituality and Resilience by Religious Affiliation

Affiliation	DSES Mean / SD	CDRISC Mean / SD
Baptist	55.37, 21.91	76.53, 16.31
Catholic	50.05, 22.14	77.20, 16.01
Protestant	57.89, 25.16	72.33, 16.78
Christian	55.16, 25.50	74.95, 17.02
Atheist/None	29.68, 14.33	71.46, 17.77
Other	46.93, 23.55	75.80, 14.86

Research Question 3:

What are the relationships between life events and resilience? Bivariate correlational analyses were conducted to determine the relationships among life events and resilience. Life events were determined using the Pre-Deployment Life Events subscale and the Childhood Experiences subscale from the DRRI (see Table 10). There was an inverse relationship between pre-deployment life events and resilience; however it was not statistically significant. Furthermore, the results revealed a significant

positive correlation between childhood experiences and resilience, where those Soldiers who scored high on resilience reported growing up in more cohesive family units (r = .24, $p \leq .01$). However, childhood experiences only explained 6% of the variance in resilience (r^2 = .057).

TABLE 10.

Correlation Between Life Events and Resilience

	1	2	3
1. Resilience	1.00		
2. PreLE	-.04	1.00	
3. CE	.24**	-.33**	1.00

Note. **Correlation is significant at the 0.01 level (two-tailed);
PreLE = Pre-Deployment Life Events; and CE = Childhood Experiences.

Research Question 4:

What are the strengths of the relationships between resilience, spirituality, life events, disruptions due to deployment, demographic characteristics, personal history, and mental health symptoms? Bivariate correlational analyses were conducted to determine the nature of the relationships between all the major variables in this study. The correlation matrix can be found in Table 11.

Resilience

Those who scored higher on the resilience scale had higher rank (r = .14, $p \leq .05$), reported growing up in more cohesive families (r = .24, $p \leq .001$), experienced greater unit support (r = .43, $p \leq .001$), and more post-deployment support (r = .49, $p \leq .001$). Additionally, there was a significant relationship

between resilience and spirituality where those who were more resilient also scored higher on daily spiritual experiences ($r = .30$, $p \leq .001$).

Resilience was significantly inversely related to deployment as disruption ($r = -.21$, $p \leq .001$), relationships within the unit ($r = -.34$, $p \leq .001$), and deployment concerns ($r = -.35$, $p \leq .001$). Additionally, resilience was significantly related to post-deployment life events ($r = -.30$, $p \leq .001$) and life and family concerns ($r = -.12$, $p \leq .05$). Soldiers who scored higher on resilience reported less challenging experiences while deployed ($r = -.27$, $p \leq .001$). When examining resilience as it related to mental health outcomes, a significant inverse relationship was noted between resilience and anxiety ($r = -.41$, $p \leq .001$), depression ($r = -.34$, $p \leq .001$), and PTSD symptoms ($r = -.39$, $p \leq .001$). Considering the meaningfulness of these findings, resilience accounted for 19% of the variance in unit support scores ($r^2 = .185$), followed by 18% of the variance in post-deployment support ($r^2 = .178$), and 16% of the variance in anxiety scores ($r^2 = .164$).

Spirituality

Participants who had more daily spiritual experiences reported more cohesive family experiences ($r = .11$, $p \leq .05$), more unit support ($r = .19$, $p \leq .001$), and more post-deployment support ($r = .25$, $p \leq .001$). Additionally, spirituality was significantly inversely related to deployment concerns ($r = -.13$, $p \leq .05$) post-

TABLE 11.

Correlation Between Resilience, Spirituality, Life Events, Disruptions due to Deployment, Demographic Characteristics, Personal History, and Mental Health Outcomes

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. RES	1.00																			
2. SPR	.30**	1.00																		
3. PDLE	-.04	-.07	1.00																	
4. CE	.24**	.11*	-.33**	1.00																
5. Dis	-.21**	.04	.07	-.14*	1.00															
6. DE	-.27**	-.21**	.33**	-.20**	.17**	1.00														
7. LFC	-.12*	-.10	.23**	-.16**	.23**	.37**	1.00													
8. US	.43**	.19**	-.26**	.29**	-.22**	-.43**	-.16*	1.00												
9. RU	-.34**	-.10	.30**	-.22**	.17**	.36**	.21**	-.54**	1.00											
10. DC	-.35**	-.13*	.24**	-.16**	.20**	.55**	.41**	-.35**	.34**	1.00										
11. PBE	-.00	-.11	.32**	-.11	.05	.51**	.17*	-.12*	.19**	.26**	1.00									
12. Rank	.14*	-.05	.07	-.03	.04	.06	.10	-.01	-.03	.01	.21**	1.00								
13. TDI	.06	-.02	.13*	-.03	.06	.13*	-.02	-.05	.03	.12*	.21**	.48**	1.00							
14. TDA	-.01	-.03	.11	-.11	.12*	.10	.13*	-.09	.02	.05	.16**	.36**	.12*	1.00						
15. TTD	.07	-.02	.16**	-.05	.13*	.17**	.07	-.09	.06	.13*	.29**	.58**	.84**	.53**	1.00					
16. PDS	.49**	.25**	-.26**	.41**	-.10	-.46**	-.09	.54**	-.35**	-.33**	-.16**	.02	.04	-.04	.02	1.00				
17. PDL	-.30**	-.15*	.48**	-.16**	.10	.34**	.29**	-.28**	.38**	.42**	.26**	-.08	-.00	.07	.04	-.29**	1.00			
18. ANX	-.41**	-.17*	.32**	-.20**	.15*	.45**	.34**	-.36**	.40**	.45**	.26**	-.02	-.02	.07	.05	-.36**	.49**	1.00		
19. DEP	-.34**	-.07	.27**	-.11	.11	.35**	.35**	-.20**	.34**	.36**	.17**	-.05	-.03	.06	.03	-.22**	.52**	.71**	1.00	
20. PTSD	-.39**	-.15*	.38**	-.21**	.16**	.56**	.39**	-.40**	.40**	.49**	.35**	.00	.04	.11	.12*	-.44**	.50**	.78**	.72**	1.00

Note. **Correlation is significant at the 0.01 level (two-tailed); *Correlation is significant at the 0.05 level (two-tailed); RES = Resilience; SPR = Spirituality; PDLE = Pre-Deployment Life Events; CE = Childhood Experiences; DIS = Disruption; DE = Deployment Environment; LFC = Life & Family Concerns; US = Unit Support; RU = Relationship within Unit; DC = Deployment Concerns; PBE = Post-Battle Experience; TDI = Times Deployed to Iraq; TDA = Times Deployed to Afghanistan; TTD = Total Time Deployed; PDS = Post-Deployment Support; PDL = Post-Deployment Life Events; ANX = Anxiety; DEP = Depression; PTSD = Post-Deployment Traumatic Stress Disorder symptoms.

deployment life events (r = -.15, $p \leq .05$), and deployment environment (r = -.21, $p \leq .001$). Furthermore, spirituality was significantly correlated with anxiety (r = -.17, $p \leq .01$), and PTSD symptoms (r = -.15, $p \leq .05$). Hence, those who scored higher on the spirituality scale had fewer deployment concerns, fewer post-deployment life events, less anxiety, and fewer PTSD symptoms. Interestingly, at most, spirituality only accounted for 7% of the variance in post-deployment support (r^2 = .065) and even less of the variance in anxiety scores (r^2 = .028).

Life Events

Life events were measured using the pre-deployment life events and childhood experiences subscales from the DRRI. The top five pre-deployment life events previously presented included the death of someone close to them, being physically injured by another person, and witnessing someone being assaulted or violently killed (see Table 4). The top five childhood experiences were presented in Table 5. Participants who reported more pre-deployment life events had significantly less cohesive childhood experiences (r = -.33, $p \leq .001$), less unit support (r = -.26, $p \leq .001$), and less post-deployment support (r = -.26, p $\leq .001$). Additionally, Soldiers who reported more pre-deployment life events had more concerns about life and family disruptions (r = .23, $p \leq .001$) including missing out on important events at home and not being able to help their family or friends if they had some type of problem. Additionally, those who reported more pre-deployment events experienced more harassment within their units (r = .30,

$p \leq .001$), had more deployment concerns ($r = .24$, $p \leq .001$), and experienced a more difficult deployment environment ($r = .33$, $p \leq .001$). Of the 299 participants included in this study, 15 participants reported their unit leaders or other unit members made unwanted attempts to stroke or fondle them. Additionally, 8 participants (3%) reported they were forced to have sex once or more often by a unit leader or other unit member. Participants who had greater exposure to the consequences of combat ($r = .32$, $p \leq .001$) such as seeing Americans or allies after they had been severely wounded or disfigured in combat (48%, $n = 144$) and seeing bodies of dead Americans or allies (37%, $n = 111$) reported significantly more pre-deployment life events. Additionally, those who were deployed to Iraq ($r = .13$, $p \leq .05$) and who spent more time deployed throughout their careers ($r = .16$, $p \leq .01$) reported significantly more pre-deployment life events.

Those who scored higher on pre-deployment life events scored significantly higher on post-deployment life events ($r = .48$, $p \leq .001$). The most frequently reported post-deployment life events included experiencing the death of someone close to the Soldier (16%, $n = 47$), experiencing a mental illness or life-threatening physical illness of someone close to them, or going through a divorce or been left by a partner or significant other (13%, $n = 38$). Pre-deployment life events significantly correlated with all three mental health outcomes of anxiety ($r = .32$, $p \leq .001$), depression ($r = .27$, $p \leq .001$), and PTSD symptoms ($r = .38$, $p \leq .001$). When examining meaningfulness of these findings, pre-deployment life events accounted for 23% of the variance in post-deployment life events scores ($r^2 = .227$),

14% of the variance in PTSD symptom scores (r^2 = .144), and 11% of the variances in anxiety (r^2 = .105), deployment environment (r^2 = .110), and post-battle experiences (r^2 = .105).

The childhood experiences subscale measured family cohesion and closeness during childhood. Overall, the participant reported growing up in cohesive families (M = 53.53, SD = 11.32). The correlations between childhood experiences and resilience (r = .24, $p \leq .001$) and pre-deployment life events (r = -.33, $p \leq .001$) were previously discussed in the results to research question 3. Additionally, life events statistically significantly correlated with spirituality (r = .11, $p \leq .05$), unit support (r = .29, $p \leq .001$), and post deployment support (r = .41, $p \leq .001$). Those who had less cohesive childhood experiences considered deployment a disruption (r = -.14, $p \leq .05$), had significantly more life and family concerns (r = -.16, $p \leq .01$), and significantly more deployment concerns (r = -.16, $p \leq .01$). Furthermore, Soldiers who had less cohesive childhood experiences reported more harassment within their units (r = -.22, p ≤ .001), more difficult deployment environments (r = -.20, $p \leq .001$), and more post-deployment life events (r = -.16, $p \leq .01$). Additionally, those who had less cohesive childhood experiences reported more anxiety (r = -.20, $p \leq .001$) and PTSD symptoms (r = -.21, $p \leq .001$).

Disruptions Due to Deployment

Deployment as disruption was measured by asking participants if they considered deployment to be a disruption. Those who considered deployment a

disruption experienced more exposure to challenges in the deployed environment (r = .17, $p \leq .01$), more harassment within their unit (r = .17, $p \leq .01$), and more deployment concerns (r = .20, $p \leq .001$). There also was a significant correlation between those who considered deployment a disruption and those who had more life and family concerns (r = .23, p ≤ .001), who deployed to Afghanistan (r = .12, $p \leq .05$) and who deployed more times throughout their career (r = .13, $p \leq .05$). Additionally, those who reported deployment was a disruption scored significantly higher on both anxiety (r = .15, p ≤ .05) and PTSD symptoms (r = .16, p < .01). In addition to the inverse relationship previously mentioned between deployment as disruption and resilience (r = -.21, $p \leq .001$), there was a significant inverse relationship between deployment as disruption and unit support (r = -.22, $p \leq .001$), where participants who reported more support from their unit did not consider deployment as a disruption.

Soldiers who experienced more challenges while living in the deployed environment also reported significantly more deployment concerns (r = .55, $p \leq .001$), more post-battle experiences (r = .51, $p \leq .001$), and more harassment within their unit (r = .36, $p \leq .001$). Additionally, those who reported having a more difficult deployment environment also reported having more life and family concerns (r = .37, $p \leq .001$) and more post-deployment life events (r = .34, $p \leq .001$). There was a significant inverse relationship between living in a difficult deployment environment and unit support (r = -.43, $p \leq .001$) and post-deployment support (r = -.46, $p \leq .001$), where those who experienced more challenges living in

the deployment environment perceived less unit support and less support when returning from deployment. Although only 36% of the Soldiers (n = 108) reported they were impressed by the quality of their leaders, 71.2% felt a sense of camaraderie between themselves and other Soldiers in their unit. Those who reported living in a more challenging deployment environment also experienced more anxiety (r = .45, $p \leq .001$), more depression (r = .35, $p \leq .001$), and more PTSD symptoms (r = .56, $p \leq .001$). When examining the meaningfulness of these findings, the deployed environment explained 32% of the variance in PTSD symptoms (r^2 = .317), 31% of the variance in deployment concerns (r^2 = .307), and 26% of the variance in post-battle experiences (r^2 = .255).

Scores on the life and family concerns subscale were significantly positively correlated with pre-deployment life events (r = .23, $p \leq .001$) and disruptions (r = .23, $p \leq .001$). Additionally, there was an inverse relationship between life and family concerns and resilience (r = -12, $p \leq .05$), childhood experiences (r = -.16, p ≤ .01), and unit support (r = -.16, p ≤ .01); those who had more life and family concerns were less resilient, had less cohesive childhood experiences, and perceived less unit support. Participants who had more concerns about life and family also perceived more harassment in their unit (r = .21, $p \leq .001$), more deployment concerns (r = .41, $p \leq .001$), more exposure to the consequences of combat (r = .17, $p \leq .01$), and more post-deployment life events (r = .29, $p \leq .001$). Furthermore, participants who had deployed to Afghanistan had statistically

significant life and family concerns (r = .13, $p \leq .05$) whereas those who had deployed to Iraq did not have significant scores on this scale.

Participants who scored high on life and family concerns also reported more anxiety (r = .34, $p \leq .001$), depression (r = .35, $p \leq .001$), and PTSD symptoms (r = .39, $p \leq .001$). When examining the meaningfulness of these findings, life and family concerns accounted for 15% of the variance in PTSD symptoms (r^2 = .154) and 17% of the variance in deployment concerns (r^2 = .165).

Participants who perceived they had higher levels of unit support reported significantly less harassment within their unit (r = -.54, $p \leq .001$), fewer deployment concerns (r = -.35, $p \leq .001$), fewer post-battle experiences (r = -.12, $p \leq .05$), and fewer post-deployment life events (r = -.28, $p \leq .001$). Furthermore, those who reported more unit support also reported more post-deployment support (r = .54, $p \leq .001$). Those who reported less unit support reported more anxiety (r = -.36, $p \leq .001$), depression (r = -.20, $p \leq .001$), and PTSD symptoms (r = -.40, $p \leq .001$). Unit support accounted for 29% of the variance in relationships within the unit (r^2 = .286) and post-deployment support (r^2 = .287), and 16% of the variance in PTSD symptoms (r^2 = .158).

The "Relationships within the Unit" subscale measures the amount of general and sexual harassment Soldiers perceived in their unit, where higher scores indicated the Soldier experienced more harassment from other unit members while deployed. Soldiers reported more general harassment (M = 14.84, SD = 6.21) than sexual harassment (M = 8.16, SD = 2.52) with a majority (68%) reporting unit

leaders or members behaved in a way that was uncooperative when working with the Soldiers while deployed (n = 203). There was a statistically significant negative relationship between relationships within the unit and resilience (r = -.34, $p \leq .001$), and unit support (r = -.54, $p \leq .001$); therefore, those who reported more harassment were less resilient and perceived less unit support. There also were significant correlations between relationships within the unit and deployment concerns (r = .34, $p \leq .001$), more post-battle experiences (r = .19, $p \leq .001$), and more post-deployment life events (r = .38, $p \leq .001$). Scores on the relationships within the unit subscale significantly correlated with the mental health outcomes of anxiety (r = .40, $p \leq .001$), depression (r = .34, $p \leq .001$), and PTSD symptoms (r = .40, $p \leq .001$). There also was a significant negative correlation between relationships within the unit and post-deployment support (r = -.35, $p \leq .001$), indicating that those who had perceived more harassment within their unit had less post-deployment support. Relationships within the unit accounted for 29% of the variance in unit support and 16% of the variance in anxiety (r^2 = .158) and PTSD symptoms (r^2 = .159).

Participants who had more deployment concerns had more post-battle experiences (r = .26, $p \leq .001$), deployed more times to Iraq (r = .12, $p \leq .05$), and deployed more times throughout their military careers (r = .13, $p \leq .05$). Sixty seven percent of participants reported concerns with their unit being attacked by the enemy (n = 201), being in great danger of being killed or wounded (54%, n = 161), and were concerned about getting sick from breathing bad air (51%, n = 152).

According to one Soldier, there were small fires constantly burning all over Iraq which left him concerned about the fumes they were exposed to while deployed (personal communication, July 11, 2012). Furthermore, those who had more deployment concerns reported less post-deployment support (r = -.33, $p \leq .001$) and significantly more post-deployment life events (r = .42, $p \leq .001$). Additionally, deployment concerns significantly correlated with the mental health outcomes of anxiety (r = .45, $p \leq .001$), depression (r = .36, $p \leq .001$), and PTSD symptoms (r = .49, $p \leq .001$). When examining the meaningfulness of the relationships, deployment concerns accounted for 17% of the variance in post-deployment life events, 20% of the variance in anxiety, and 24% of the variance in PTSD symptoms (r^2 = .241).

Higher scores on the post-battle experience subscale indicated more exposures to the consequences of combat. Those Soldiers who scored higher on the post-battle experience subscale had more rank (r = .21, $p \leq .001$), deployed to Iraq (r = .21, $p \leq .001$), and/or to Afghanistan (r = .16, $p \leq .01$), and had spent more time deployed throughout their careers (r = .29, p ≤ .001). Post-battle experiences also were significantly related to post-deployment life events (r = .26, p ≤ .001) where those who had more post-battle experiences had significantly more post-deployment life events. Furthermore, those who had more post-battle experiences reported less post-deployment support (r = -.16, p ≤ .01). Additionally, those who scored higher on post-battle experiences also scored higher on the mental health outcomes of anxiety (r = .26, $p \leq .001$), depression (r = .17, $p \leq .01$), and PTSD

symptoms (r = .35, $p \leq .001$). When considering the meaningfulness of these findings, post-battle experiences accounted for 12% of the variance in PTSD symptoms (r^2 = .122) and only 8% of the variance in times deployed throughout their career (r^2 = .082).

Demographic Characteristics and Personal History

The rank of participants included in this study ranged from private (E-1) to sergeant (E-5). Rank was significantly related to resilience (r = .14, $p \leq .05$), times deployed to Iraq (r = .48, p $\leq$ .001), and times deployed to Afghanistan (r = .36, $p \leq .001$). Additionally, those who had more rank spent more time deployed throughout their careers (r = .58, $p \leq .001$). Considering the meaningfulness of the findings, rank accounted for 34% of the variance in total time deployed throughout the careers (r^2 = .338) and 23% of the variance in times to deployed to Iraq (r^2 = .228).

Post-deployment support was significantly correlated with a number of key variables: resilience (r = .49, $p \leq .001$), spirituality (r = .25, $p \leq .001$), childhood experiences (r = .41, $p \leq .001$), and unit support (r = .54, $p \leq .001$). Additionally, as previously mentioned, post-deployment support was significantly negatively correlated with pre-deployment life events (r = -.26, $p \leq .01$), deployment environment (r = -.46, $p \leq .001$), relationships within the unit (r = -.35, $p \leq .001$), and deployment concerns (r = -.16, $p \leq .001$). Post-deployment support also was significantly negatively correlated with post-deployment life events where

participants who had more post-deployment support had fewer post-deployment life events (r = -.29, $p \leq .001$). Participants who scored higher on post-deployment support reported less anxiety (r = -.36; $p \leq .001$) and fewer PTSD symptoms (r = -.44, $p \leq .001$). When examining the meaningfulness of these findings, post-deployment support explained 29% of the variance in unit support (r^2 = .287), 23% of the variance in resilience (r^2 = .235), and 19% of the variance in PTSD symptoms (r^2 = .193).

Post-deployment life events significantly correlated with pre-deployment life events (r = .48, $p \leq .001$), deployment concerns (r = .42, $p \leq .001$), relationships within the unit (r = .38, $p \leq .001$), deployment environment (r = .34, $p \leq .001$), life and family concerns (r = .29, $p \leq .001$), and post-battle experiences (r = .26, $p \leq .001$). Additionally, as previously mentioned, those who scored high on post-deployment life events scored significantly lower on resilience (r = -.30, $p \leq .001$), unit support (r = -.28, $p \leq .001$), post-deployment support (r = -.19, $p \leq .001$) and lower on spirituality (r = -.15, p $\leq$ .05). Furthermore, those who reported more post-deployment life events scored higher on the mental health outcomes of anxiety (r = .49, $p \leq .001$), depression (r = .52, $p \leq .001$), and PTSD symptoms (r = .50, $p \leq .001$). When examining the meaningfulness of the data, post-deployment life events accounted for 27% of the variance in depression (r^2 = .267), 25% of the variance in PTSD symptoms (r^2 = .252), and 24% of the variance in anxiety (r^2 = .235).

Mental Health Symptoms

Anxiety, depression, and PTSD symptoms were three key variables that were clearly co-morbid in this sample. Table 12 provides a summary of variables and their relationship to anxiety, depression, and PTSD symptoms.

Table 12.

Summary of Co-morbidity with Mental Health Variables

Variable (If high…)	Anxiety	Depression	PTSD symptoms
Resilience	**low**	**low**	**low**
Spirituality	**low**	low	**low**
Pre-deployment Life Events	**high**	**high**	**high**
Childhood Experiences	**low**	low	**low**
Disruption	**high**	high	**high**
Deployment Environment	**high**	**high**	**high**
Life and Family Concern	**high**	**high**	**high**
Unit Support	**low**	**low**	**low**
Relationships within Unit	**high**	**high**	**high**
Deployment Concerns	**high**	**high**	**high**
Post-Battle Experiences	**high**	**high**	**high**
Post-Deployment Support	**low**	**low**	**low**
Post-Deployment Life Events	**high**	**high**	**high**

Note: Statistically significant variables are in **bold**

Anxiety was significantly related to depression (r = .71, $p \leq .001$) and PTSD symptoms (r = .78, $p \leq .001$). Depression was significantly related to PTSD symptoms (r = .72, $p \leq .001$). The three mental health outcomes significantly negatively correlated with resilience (anxiety; r = -.41; depression; r = -.34; and PTSD symptoms; r = -.39; all $p \leq .001$), unit support (anxiety; r = -.36; depression; r = -.20; and PTSD symptoms; r = -.40; all $p \leq .001$), and post-deployment support (anxiety; r = -36; depression; r = -.22; and PTSD symptoms; r = -.44; all $p \leq .001$). Additionally, there was a significant correlation between the three mental health outcomes and post-deployment life events (anxiety; r = .49; depression; r = .52; and PTSD symptoms; r = .50; all $p \leq .001$). Soldiers who reported higher anxiety, depression, and PTSD symptoms also reported more harassment within their unit (anxiety; r = .40; depression; r = .34; and PTSD symptoms; r = .40; all $p \leq .001$) and more deployment concerns (anxiety; r = .45; depression; r = .36; and PTSD symptoms; r = .49, all $ps \leq .001$). There also were significant correlations between the three mental health outcomes and pre-deployment life events (anxiety; r = .32; depression; r = .27; and PTSD symptoms r = .38; all $p \leq .001$) where those who reported more anxiety, depression, and PTSD symptoms also experienced more pre-deployment life events. Considering the meaningfulness of the mental health outcomes, anxiety accounted for 61% of the variance in PTSD symptom scores (r^2 = .605), depression accounted for 51% of the variance in PTSD symptom scores (r^2 = .514), and anxiety accounted for 50% of the variance in depression scores (r^2 = .501).

Regression Model

According to Munro (2005), correlations between .20 and .40 are normally found in psychological research. Considering these findings, all correlations greater than .40 were entered in steps as predictor variables into a hierarchical regression analysis where those with the strongest correlations were entered first, based on the outcome variable. Table 13 lists the variables that were chosen based on the strengths of the correlations.

TABLE 13.

Predictors Identified for Regression Models (*N* = 299)

Predictor Variables	Anxiety Model	Depression Model	PTSD Model
Resilience	-.41		
Deployment Environment	.45		.56
Unit Support			-.40
Relationships within the Unit	.40		.40
Deployment Concerns	.45		.45
Post-Deployment Support			-.44
Post-Deployment Life Events	.49	.52	.50
Anxiety		.71	.78
Depression	.71		.72
PTSD Symptoms	.78	.72	

Note. Correlations are all significant at $p < .01$ (two-tailed)

The regression model for anxiety symptoms is displayed in Table 14. A hierarchical linear regression was conducted to examine seven independent variables as predictors of anxiety: resilience, deployment environment, relationships within the unit, deployment concerns, post-deployment life events, depression, and PTSD symptoms. The correlation matrix was examined to provide a preliminary examination of multicollinearity. No correlations in this model were substantial ($r \geq .9$) between predictors, therefore, according to Field (2009), multicollinearity should not be an issue.

Because the correlations between anxiety and PTSD were the strongest either due to co-morbidity or some unknown factor ($r = .78$, $p \leq .001$), PTSD was the first predictor entered into the regression model and accounted for 60% of the variance in anxiety ($R^2 = .604$, $p \leq .001$). With depression added in Step 2, the variance increased by 5% ($R^2 = .650$, $p \leq .001$). Post-deployment life events was entered in Step 3, with no change in variance ($R^2 = .654$, $p \geq .05$). Deployment environment was entered in Step 4, with no change in variance ($R^2 = .654$). Deployment concerns was entered next in Step 5 and there a slight, but insignificant increase in variance ($R^2 = .657$). However, resilience was entered in Step 6 and increased the variance explained to 66% ($R^2 = .664$, $p \leq .05$). Relationships within the unit was entered in Step 7 but did not significantly add to the amount of variance explained ($R^2 = .666$, $p \geq .05$). See Table 15 for the model summary of anxiety symptoms. Overall, PTSD symptoms, depression, and resilience best accounted for the variance in anxiety symptoms in this sample.

TABLE 14.

Hierarchical Regression Analysis for Anxiety Symptoms

	Unstandardized Coefficients		Standardized Coefficients	*t*	*p*
	B	Std Error	β		
Step 1 (Constant)	1.701	.328		5.179	.000
PTSD symptoms	.295	.014	.777	21.236	.000
Step 2 (Constant)	-.754	.498		-1.514	.131
PTSD Symptoms	.211	.019	.555	11.250	.000
Depression Symptoms	.216	.034	.310	6.282	.000
Step 3 (Constant)	-.670	.500		-1.340	.181
PTSD Symptoms	.204	.019	.537	10.49	.000
Depression Symptoms	.202	.036	.289	5.668	.000
Post-Deployment Life Events	.257	.160	.066	1.601	.110
Step 4 (Constant)	-1.505	1.102		-1.365	.173
PTSD Symptoms	.196	.022	.515	9.086	.000
Depression Symptoms	.206	.036	.294	5.727	.000
Post-Deployment Life Events	.241	.162	.062	1.490	.137
Deployment Environment	.017	.020	.036	.850	.396
Step 5 (Constant)	-2.252	1.194		-1.885	.060
PTSD Symptoms	.191	.022	.503	8.808	.000
Depression Symptoms	.206	.036	.294	5.745	.000
Post-Deployment Life Events	.187	.165	.048	1.135	.257
Deployment Environment	.004	.021	.009	.193	.847
Deployment Concerns	.038	.024	.070	1.600	.111
Step 6 (Constant)	1.011	1.810		.559	.577
PTSD Symptoms	.184	.022	.485	8.493	.000
Depression Symptoms	.199	.036	.286	5.603	.000
Post-Deployment Life Events	.156	.164	.040	.950	.343
Deployment Environment	.004	.021	.009	.203	.839
Deployment Concerns	.029	.024	.054	1.226	.221
Resilience	-.035	.015	-.091	-2.386	.018
Step 7 (Constant)	.098	1.924		.051	.960
PTSD Symptoms	.182	.022	.479	8.385	.000
Depression Symptoms	.197	.036	.283	5.552	.000
Post-Deployment Life Events	.116	.166	.030	.701	.484
Deployment Environment	.001	.021	.001	.032	.975
Deployment Concerns	.027	.024	.051	1.157	.248
Resilience	-.032	.015	-.082	-2.125	.034
Relationships within Unit	.045	.033	.054	1.383	.168

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

TABLE 15.

Model Summary for Anxiety Symptoms

Model	R^2	$R^2\Delta$
1	.604	.604**
2	.650	.047**
3	.654	.003
4	.654	.001
5	.657	.003
6	.664	.007*
7	.666	.002

Note: * $p < .05$; ** $p < .001$.

The next hierarchical regression model calculated was for depression symptoms and included the following three predictor variables: PTSD symptoms, anxiety, and post-deployment life events. Examining the correlations between predictors, no correlations in this depression model were substantial ($r \geq .9$); therefore, multicollinearity is unlikely (Field, 2009). PTSD was entered first in Step 1 because it had the strongest correlation to depression symptoms ($r = .72$, $p \leq .001$). PTSD symptoms accounted for 51% of the variance in depression symptoms ($R^2 = .514$, $p \leq .001$). The addition of anxiety in Step 2 increased the variance accounted for by 6% ($R^2 = .572$, $p \leq .001$). Fifty-nine percent of the variance in depression symptoms was accounted for with the addition of post-deployment life events in Step 3 ($R^2 = .592$, $p \leq .001$). See Table 16 for the depression regression model and Table 17 for the model summary. Overall, the mental health outcomes of PTSD symptoms and anxiety along with post-deployment life events added the most significant amount of variance to the depression model.

TABLE 16.

Hierarchical Regression Model for Depression Symptoms

	Unstandardized Coefficients		Standardized Coefficients	*t*	*p*
	B	Std. Error	β		
Step 1 (Constant)	11.322	.519	.717	21.820	.000
PTSD Symptoms	.390	.022		17.738	.000
Step 2 (Constant)	10.398	.510		20.404	.000
PTSD Symptoms	.229	.033	.421	6.958	.000
Anxiety	.546	.087	.381	6.299	.000
Step 3 (Constant)	10.196	.501		20.343	.000
PTSD Symptoms	.200	.033	.368	6.062	.000
Anxiety	.489	.086	.341	5.683	.000
Post-Deployment Life Events	.930	.244	.166	3.803	.000

TABLE 17.
Model Summary for Depression Symptoms

Model	R^2	$R^2 \Delta$
1	.514	.514*
2	.572	.057*
3	.592	.020*

Note: * $p < .001$.

Table 18 provides the summary of the final hierarchical regression analysis conducted in this study to examine the factors that predicted PTSD symptoms. The eight independent variables included in this analysis were: deployment environment, unit support, relationships within the unit, deployment concerns, post-deployment life events, anxiety, and depression. All correlations between the predictors included in this model were less than .90; therefore, multicollinearity was unlikely. Anxiety was entered in the first step because it had the strongest correlation to PTSD symptoms ($r = .78$, $p \leq .001$). It accounted for 60% of the

variance in PTSD symptoms (R^2 = .604, $p \leq .001$). Depression was entered in Step 2 and increased the variance by 6% (R^2 = .659, $p \leq .001$). When deployment environment was added in Step 3, it added another 5% to the variance accounted for (R^2 = .712, $p \leq .001$). Post-deployment life events was added in Step 4 but did not account for a significant amount of the variance in depression (R^2 = .714, $p \geq .05$). Deployment concerns was added in step 5 and the variance accounted for remained unchanged (R^2 = .715, $p \geq .05$). Post-deployment support was added in Step 6 and increased the variance accounted for by 1% (R^2 = .727, $p \leq .001$). Relationships within the unit was added in Step 7 but did not add to the amount of variance accounted for (R^2 = .727, $p \geq .05$). Unit support was added in Step 8 and also did not add to the amount of variance accounted for in PTSD symptoms (R^2 = .728, $p \geq .05$). Overall, the variables that significantly accounted for the variance in PTSD symptoms were anxiety, depression, deployment environment, and post-deployment support. See Table 19 for the model summary.

TABLE 18.

Hierarchical Regression Model for PTSD Symptoms

	Unstandardized Coefficients		Standardized Coefficients	*t*	*p*
	B	Std. Error	β		
Step 1 (Constant)	3.231	.883		3.684	.000
Anxiety	2.046	.096	.777	21.236	.000
Step 2 (Constant)	-3.595	1.283		-2.802	.005
Anxiety	1.424	.127	.541	11.250	.000
Depression	.614	.088	.334	6.939	.000

TABLE 18 (cont).

Hierarchical Regression Model for PTSD Symptoms

	Unstandardized Coefficients		Standardized Coefficients	*t*	*p*
	B	Std. Error	β		
Step 3 (Constant)	-18.764	2.389		-7.856	.000
Anxiety	1.149	.123	.436	9.373	.000
Depression	.586	.082	.319	7.185	.000
Deployment Environment	.317	.043	.156	7.309	.000
Step 4 (Constant)	-18.083	2.430		-7.856	.000
Anxiety	1.123	.124	.427	9.086	.000
Depression	.552	.085	.300	6.518	.000
Deployment Environment	.307	.044	.248	7.008	.000
Post-Deployment Life Events	.560	.387	.054	1.445	.150
Step 5 (Constant)	-19.494	2.648		-7.363	.000
Anxiety	1.099	.125	.417	8.808	.000
Depression	.553	.085	.301	6.532	.000
Deployment Environment	.280	.048	.227	5.810	.000
Post-Deployment Life Events	.452	.395	.044	1.145	.253
Deployment Concerns	.075	.057	.053	1.333	.184
Step 6 (Constant)	-5.215	4.898		-1.065	.288
Anxiety	1.028	.124	.391	8.274	.000
Depression	.580	.083	.315	6.945	.000
Deployment Environment	.227	.050	.184	4.569	.000
Post-Deployment Life Events	.313	.390	.030	.802	.423
Deployment Concerns	.071	.056	.050	1.271	.205
Post-Deployment Support	-.197	.057	-.122	-3.440	.001
Step 7 (Constant)	-5.362	5.187		-1.034	.302
Anxiety	1.027	.125	.390	8.203	.000
Depression	.579	.084	.315	6.921	.000
Deployment Environment	.227	.050	.184	4.537	.000
Post-Deployment Life Events	.307	.396	.030	.775	.439
Deployment Concerns	.070	.056	.050	1.261	.208
Post-Deployment Support	-.196	.058	-.122	-3.377	.001
Relationships within the Unit	.007	.078	.003	.087	.931

TABLE 18 (cont).

Hierarchical Regression Model for PTSD Symptoms

	Unstandardized Coefficients		Standardized Coefficients	*t*	*p*
	B	Std. Error	β		
Step 8 (Constant)	-2.801	5.652		-.496	.621
Anxiety	1.013	.126	.385	8.055	.000
Depression	.591	.084	.322	7.013	.000
Deployment Environment	.220	.050	.178	4.370	.000
Post-Deployment Life Events	.310	.396	.030	.784	.434
Deployment Concerns	.066	.056	.047	1.188	.236
Post-Deployment Support	-.171	.062	-.106	-2.750	.006
Relationships within the Unit	-.031	.085	-.014	-.366	.714
Unit Support	-.068	.060	-.047	-1.138	.256

TABLE 19.

Model Summary for PTSD Symptoms

Model	R^2	R^2 Δ
1	.604	.604*
2	.659	.056*
3	.712	.052*
4	.714	.002
5	.715	.002
6	.727	.011*
7	.727	.000
8	.728	.001

Note: * $p \leq .001$.

Instrument Reliability and Post Hoc Analysis

Table 20 contains the internal consistency reliability coefficients for the instruments used in this study. Findings are consistent with the reliability coefficients reported in the literature for the Connor Davidson Resilience Scale

(Connor & Davidson, 2003; Maguen et al., 2008; Pietrzak et al., 2009); Daily Spiritual Experiences Scale (Underwood, 2011; Underwood & Teresi, 2002); Generalized Anxiety Disorder-7 (Spitzer et al., 2006); Center for Epidemiological Studies Depression Scale (Clark et al., 1981; Lapierre et al., 2007; Roberts, 1980); Post-Traumatic Stress Disorder-Military (King et al., 2008; Maguen et al., 2008; Pietrzak et al., 2009; Polusney et al., 2009); Deployment Risk and Resilience Inventory (King et al., 2006; King et al., 2008; Pietrzak et al., 2009; Polusney et al., 2009; Vogt et al., 2008). Using the significance level of .05, a sample size of 299, and a moderate effect size, the post hoc power analysis for this study was .99.

TABLE 20.

Instrument Reliability Coefficients (N = 299)

Instrument	**Cronbach's α**
Connor-Davidson Resilience Scale	.95
Daily Spiritual Experiences Scale	.97
Generalized Anxiety Disorder-7	.94
Center for Epidemiological Studies Depression Scale	.82
Post-Traumatic Stress Disorder Scale-Military	.96
Deployment Risk and Resilience Inventory	
A: Pre-deployment Life Events	.77
B: Childhood Experiences	.91
D: Deployment Environment	.89
E: Life and Family Concerns	.86
F: Unit Support	.93
G: Relationships with the Unit	.88
H: Deployment Concerns	.87
J: Post-Battle Experiences	.90
L: Post-Deployment Support	.88
M: Post-Deployment Life Events	.63

Chapter Summary

The aim of this study was to determine the relationships between resilience, spirituality, life events, disruptions, demographic characteristics, personal history, and mental health symptoms in active duty Soldiers who were within 6-12 months of returning from deployment to Afghanistan. Data analyses procedures included descriptive and correlational analyses. When correlations were greater than .40, hierarchical regression analyses were conducted.

Descriptive statistics were examined for the sample and the key variables (resilience, spirituality, life events, and mental health outcomes). Pearson correlations were inspected to determine the relationships between the independent and dependent variables. Results revealed many statistically significant correlations. The first research question examined the relationship between resilience and mental health outcomes. There were small, significant inverse correlations between resilience and the three mental health outcomes of anxiety, depression, and PTSD symptoms. The correlation between resilience and anxiety was of sufficient strength ($r \geq .40$) to conduct a regression analysis and resilience did explain a small amount of the variance in anxiety.

The second research question examined the relationship between spirituality and resilience. Interestingly, there were small, but significant correlations between the two variables. Participants who had a higher level of resilience had more spiritual experiences. The correlations were less than substantial ($r < .40$); therefore no further analyses were conducted.

The third research question examined the relationship between life events and resilience. There was a small, non-significant inverse relationship between pre-deployment life events and resilience. However, there was a small, but significant relationship between resilience and childhood experiences, where those who were more resilient had more cohesive family experiences. Because both of the correlations were less than .40, no further analyses were conducted.

The fourth research question examined the relationships between all the key variables. There were numerous small significant relationships. Interestingly, resilience, pre-deployment life events, deployment environment, life and family concerns, unit support, relationships within the unit, deployment concerns, post-battle experiences, and post-deployment life events were all significantly related to all three mental health outcomes of anxiety, depression, and PTSD symptoms. Taken together, 10 predictors resulted from this analysis and were placed into separate regression analyses with the three mental health outcomes. Each outcome accounted for a significant amount of variance in the other. In addition to PTSD and depression, low levels of resilience accounted for the most significant amount of variance in anxiety symptoms. In addition to anxiety and PTSD symptoms, post-deployment life events accounted for the most significant amount of variance in depression symptoms. Deployment environment accounted for the most significant amount of variance in PTSD symptoms, in addition to anxiety and depression. The implications of these findings will be discussed in Chapter 5.

CHAPTER 5

SUMMARY, DISCUSSION, IMPLEMENTATION, AND RECOMMENDATIONS

This chapter summarizes the key points of the study and provides a discussion of the most relevant findings. It also describes the study findings in relation to the current research literature and provides limitations of the study. Finally, the implications of the findings and recommendations for future nursing practice, education, and research are discussed.

Summary of the Study

This descriptive, correlational study examined the relationships between resilience, spirituality, life events, disruption, and mental health symptoms in active duty Soldiers who deployed to Iraq and Afghanistan and returned in the past 6-12 months. Furthermore, this research determined the strengths of the relationships between spirituality and resilience in these active duty Soldiers. Major outcomes of this study included the identification of factors that influence the likelihood of developing mental health symptoms after returning from deployment and the relationship resilience has to these mental health symptoms in this group of active duty Soldiers. The conceptual framework that guided this study was Richardson's Resilience Theory (2002).

After obtaining IRB approval from the San Antonio Military Medical Center (SAMMC, formerly known as Brooke Army Medical Center [BAMC]) and the University of Texas at Austin, a convenience sample of 350 Soldiers was recruited from Fort Campbell, Kentucky. The Soldiers were recruited from the 4th Brigade Combat Team (BCT) during their Post Deployment Health Reassessment (PDHRA) and (1) were between the ages of 18 and 35 years; (2) between the ranks of Private (E-1) and Sergeant (E-5); (3) within 6 – 12 months of returning from deployment to Afghanistan; and (4) not currently undergoing physical or mental health care related to injuries received while deployed. Studies have shown that Soldiers undergoing mental or physical health care related to combat experiences had increased rates of mental health symptoms that are above and beyond the normal readjustment difficulties (Grieger et al., 2006); therefore they were excluded from participation in this study.

Soldiers were given an orientation briefing from the Command Sergeant Major and Health Promotions Officer who introduced the study. Soldiers who expressed interest in participating in the study were provided further information and the researcher reinforced the anonymity of participants in the study. Those Soldiers who wished to participate were given a pen and survey booklet and provided a place to sit. The survey booklet contained seven instruments: (1) Demographic Survey, (2) Connor-Davidson Resilience Scale, (3) Deployment Risk and Resiliency Inventory (DRRI), (4) Daily Spiritual Experiences Scale, (5) Generalized Anxiety Disorder-7, (6) Center for Epidemiological Studies Depression Scale, and (7) Post-Traumatic Stress Disorder

Checklist-Military Version (see Appendix A for instruments). There were a total of 268 questions that took an average of 30 minutes for participants to complete. Consent was implied by completing the survey. There was an 85% completion rate perhaps due to the fact that Soldiers were given as much time as they needed to complete the survey during their Post-Deployment Health Reassessment (PDHRA).

After excluding 51 surveys for incomplete responses or failure to meet inclusion criteria, the final sample of 299 Soldiers was used for data analysis. Using SPSS 18.0, exploratory analyses were conducted to examine distributions, measures of central tendency, outliers, and to test assumptions (Field, 2009). Scatterplots confirmed the linear relationships between the variables. Histograms were examined for normality, skewness, and kurtosis among the key variables. Furthermore, assumptions of homoscedasticy were examined and bivariate correlational analyses were employed to determine the strength and direction of the relationships between the independent and dependent variables, if any existed. There were skewed data, however, because this was an exploratory study, and transformations also resulted in skewed data, analyses were conducted using original data. Multicollinearity was assessed in all variables; however, there were no correlations greater than .90. Because psychological research usually has correlations between .20 and .40, the decision was made to place variables with correlations greater than .40 as predictor variables into regression models (Munro, 2005).

Hierarchical linear regression showed decreased resilience, PTSD symptoms, and depression were significant predictors for anxiety. Post-deployment life events, deployment environment, deployment concerns, and relationships within the unit all were excluded from the anxiety model. Overall, the level of resilience, PTSD symptoms, and depression accounted for 66% of the variance ($R^2 = .664$, $p \leq .05$) in anxiety symptoms reported by this group of Soldiers.

In the depression model, the presence of PTSD symptoms, anxiety, and post-deployment life events were all entered in three steps as predictors of depression. All variables entered were significant predictors for depression symptoms. These predictors accounted for 59% of the variance in depression symptoms reported by this group of Soldiers ($R^2 = .592$, $p \leq .001$).

In the final regression model, the PTSD symptom model, eight predictor variables were entered including anxiety, depression, deployment environment, post-deployment life events, deployment concerns, post deployment support, relationships within the unit, and unit support. Of the eight, anxiety, depression, deployment environment, and post-deployment support were all significant predictors of PTSD symptoms. These four predictors accounted for 73% of the variance in PTSD symptoms reported by this group of Soldiers ($R^2 = .727$, $p \leq .001$).

Discussion of Study Findings

It is important to consider these findings in the context that this was a unique sample of active duty Soldiers from one Brigade Combat Team (BCT) stationed in Fort Campbell Kentucky. The majority of Soldiers who participated in this study were Caucasian males between the ages of 21 and 26 years old (M = 25.24, SD = 3.96). It is not uncommon for Soldiers assigned to BCTs to be male because the BCT consists of infantry and combat units. Until recently, female Soldiers were only assigned to the brigade headquarters in support roles within the BCT (Menzies, 2012). The Soldiers who completed this survey were in the military an average of 4 years (M = 4.34, SD = 2.84) and 57% were in the rank of Specialist (E-4). Although 71% had only deployed one time, the average time they spent deployed throughout their careers was 18 months (M = 17.97, SD = 10.23). These demographic findings are consistent with the descriptions of BCTs in the literature. According to LaPierre et al. (2007), of the 2573 Soldiers in a National Guard BCT, 91% were white males between the age of 18 – 29 years.

Soldiers are indoctrinated with the Army values from the day they enter basic training to the day they retire or leave the military. Duty, loyalty, and selfless service are three of those values that may have influenced whether or not Soldiers felt deployment was a disruption to their lives. Additionally, Soldiers may have felt that they were betraying their unit if they affirmed this question. Over half of the Soldiers

(54%) did not believe deployment was a disruption. This result may also have been influenced by the fact that 71% of the Soldiers in this study are returning from their first deployment. They have yet to experience the challenges associated with multiple deployments. However, Soldiers who considered deployment a disruption also reported significantly more anxiety and PTSD symptoms. There were statistically significant positive correlations between those who considered deployment a disruption and marital status ($r = .17$, $p < .01$) and those who spent more time deployed throughout their careers also considered deployment a disruption ($r = .13$, $p < .05$) perhaps due to having to prepare and consider not only themselves, but also their families.

Resilience

One component of the Comprehensive Soldier Fitness program is resilience training, which was implemented and made mandatory in 2008 (Cornum et al., 2011). Despite this directive, 32% of the Soldiers in this study stated they had never completed resilience training. The majority of Soldiers who did not find it helpful never completed the training. Of those who did complete the mandatory training, only 59% found it to be helpful. Some of the Soldiers commented that the training was inadequate because the instructors seemed to be disingenuous and had no deployment experience. Additional comments surrounded the Soldiers expressing concerns during the training that were never further addressed by the trainers. Positive comments about the training included that it prepared the Soldiers for what to expect when going on a deployment and what to expect when returning. An unexpected positive comment about the training focused on

it simply giving the Soldiers some time to sit and listen; time away from their normal jobs. These results were similar to those described by Adler, Bliesse, McGurk, Hoge, and Castro (2009), who conducted a study examining the impact of Battlemind training and debriefing with a group of active duty Soldiers who were within a few days of returning from deployment. Components of that training are now major components of the current resilience training. In that study, Soldiers reported the program was valuable for bringing their units closer together, but otherwise lacked usefulness (Adler et al., 2009).

The negative comments voiced by the Soldiers in this study are of concern because they may speak to the issue of why Soldiers continue to have difficulty adjusting when coming home from deployment despite the training. Although there is evidence in the literature that reports people who have received resilience training had a lower number of mental health symptoms (Jarrett, 2008), there were no empirical measures found that examined the relationships between receiving resilience training and levels of resilience or the relationship between resilience interventions and mental health outcomes in active duty Soldiers who have combat experience. Equally concerning is the fact that each Soldier who entered the Army within the past five years should have received the mandatory resilience training when they first came into the military (Cornum et al., 2011). However, of the Soldiers who answered they had not received pre-deployment resilience training, 26% had been in the military five years or less (n = 76). Furthermore, all the Soldiers in this study should have received this

training either prior to or upon returning from deployment (Cornum et al., 2011), yet 32% reported they had never received the training.

The mean score for resilience in this group of Soldiers was 75.05 (*SD* = 16.15, *N* = 299). This score was higher than the mean score found in other military populations reported in the literature (Pietrzak et al., 2009), but lower than the mean score found by Connor and Davidson (2003) in the general population (*M* = 80, *SD* = 12.8). One reason for this difference is perhaps due to the training of the Soldiers in this BCT. Although many of the Soldiers in this study have only been in the military for a few years, they have all undergone and successfully completed rigorous training that qualified them for being in this elite brigade. For example, these Soldiers have undergone Air Assault training. The Air Assault course held at Fort Campbell Kentucky is a 10 day course that challenges Soldiers mentally and physically. They are trained on skills that qualify them to rappel out of helicopters, conduct aero-medical evacuations, and conducting combat assaults. Requirements for completion include completing a rigorous obstacle course that is designed to physically challenge them while determining if the Soldier will be able to safely continue with the training, completing a two mile run within 18 minutes, and completing a 12 mile road march in less than three hours on the last day of training. Soldiers also take several multiple choice tests and hands-on tests where they have to demonstrate proper hand and arm signals and loading techniques. Soldiers must apply for the course and not everyone who applies is selected and not everyone who is selected is successful (Sabalauski Air Assault School, 2012).

In addition to Air Assault, these Soldiers complete Airborne training which trains Soldiers on the safety factors and other training to prepare them to parachute out of airplanes under adverse conditions (1-507th Parachute Infantry Regiment, 2012). The training standards and requirements are similar to those of the Air Assault course where Soldiers are both mentally and physically stressed over three weeks. Additionally, some of these Soldiers have undergone Ranger training, which is considered one of the most rigorous training courses in the Army (Goarmy.com, 2012). Arguably, these Soldiers have been tested throughout the training they completed that allows them to develop skills required to survive given the mission of this BCT. If training builds resilience, then perhaps this training is the reason these Soldiers have a higher level of resilience than other Soldiers. They have encountered many adverse situations that may have built up their resilience prior to deploying, which helps them adjust before, during, and after returning from deployment. According to one Soldier who is Airborne, Air Assault, and Expert Field Medical Badge trained, training is realistic and causes you to be better prepared for the physical stress of living in the deployed environment (personal communication, July 10, 2012). Not every Soldier goes through this training nor do they all successfully complete it. You must have a moderate to high level of resilience to endure the training that sets this elite group of Soldiers apart from the rest of the Soldiers in the military. When asked to respond to the statement "I can deal with whatever comes my way," 97.3% of the Soldiers answered *sometimes true* to *true*

nearly all the time, perhaps indicating their ability to respond to challenges based on the training they have completed.

There was a moderate inverse correlation between resilience and anxiety and small inverse correlations between resilience and PTSD symptoms and resilience and depression. These findings were similar to those discussed in the literature examining resilience in active duty and reserve Soldiers, where those who were considered resilient had fewer mental health symptoms (Pietrzak, Johnson et al., 2010; Pietrzak & Southwick, 2011). Pietrzak, Johnson et al. (2010) examined resilience in a group of Connecticut Veterans and found that resilience had moderate inverse correlations with PTSD symptoms (r = -.53, $p \leq .001$) and depression symptoms (r = -.57, $p \leq .001$). Green et al. (2010), who conducted research on 497 veterans who deployed to Iraq or Afghanistan since 2001, found similar results. That group of Soldiers had a mean resilience score of 72.02 (SD = 17.52; N = 497). Those who had PTSD at the time of the study had a mean score of 62.95 (SD = 17.28; n = 189) while those who did not have PTSD had a mean score of 77.59 (SD = 15.2; n = 308). Similar to the findings in the current study, using multivariate logistic regression the researchers found that resilience was associated with decreased risk for PTSD, whereby Soldiers who scored higher on the resilience scale had fewer PTSD symptoms even after controlling for combat exposure and traumatic life events. Maguen et al. (2008) found similar results when examining resilience in a group of active duty Air Force medical personnel preparing to deploy to Iraq. Airmen who scored high on resilience had fewer

PTSD symptoms. However, when resilience was placed in a regression model, Maguen et al. (2008) found that it did not contribute a significant amount to the overall model after accounting for pre-deployment stressors, positive military experiences, and life events (B = -.06, p > .05). Findings from these studies all suggested that Soldiers and Airmen who were more resilient were less likely to experience mental health symptoms, especially PTSD symptoms, after returning from deployment.

Spirituality

Spirituality is one variable that was thought to contribute to ones level of resilience. There is evidence in the literature that people who have a higher level of spirituality are more resilient and have fewer mental health symptoms (Greene et al., 2003; Mofidi et al., 2006). This was the first study of active duty Soldiers that used the DSES to measure spirituality. Because there is a sparse amount of research in the literature about spirituality in active duty Soldiers, the results of the current study were compared to studies examining spirituality in civilians. There was a small statistically significant positive correlation between spirituality and resilience. Additionally, there were negative correlations between spirituality and anxiety and spirituality and PTSD symptoms. Findings from the literature regarding spirituality show that it may influence one's level of resilience where those who reported high ratings of spirituality had greater resilience when under stress (Green et al., 2003; Hughes, McMollum, Sheftel, & Sanchez, 1994; McIntosh, Poulin, Silver, & Holman, 2011; Pardini et al., 2000; Pargament et al., 1990). After studying 18 healthcare professionals, Greene et al. (2003)

found that over half of the professionals stated that spirituality was an important factor during stressful times; spirituality gave meaning to life events and helped people cope. Pargament et al. (1990) found similar results when studying spirituality in members of several different Christian churches; spirituality helped them cope with negative life events. They also found that those who had a belief in God and were involved in religious activities had more positive outcomes to negative events. Mofidi et al. (2006) found that spirituality was inversely related to depression in a group of middle aged people, and as in the current study, spirituality explained 9% of the variance in depression symptoms. Similar to findings in this study, Sandage (2011) found that there was a negative relationship between intrinsic spirituality and mental health symptoms when studying a group of masters level seminary students.

Findings discussed in the literature also have shown the positive aspects of spirituality (such as optimism, hope, and social support) and those aspects are inversely related to mental health (Koenig, 2008; Mofidi et al, 2006; Pardini et al., 2000). In this current study, there was a statistically significant positive relationship between spirituality and post deployment support, however it was not of sufficient strength to conduct further analyses. Social support is discussed in the literature as one of the things that may contribute to the positive relationship between spirituality and coping because it provides a social network to support people when they encounter negative events (Mofidi et al., 2006). Furthermore, there was a positive relationship between spirituality and post-deployment support in the Soldiers in the current study.

There are times when spirituality is associated with worsening mental health symptoms. Connor et al. (2003) and Pargament (1998) found spirituality was associated with increased levels of distress and anger. When studying a robust sample of people who survived violent trauma, spirituality was associated with increased severity of PTSD symptoms (Connor et al., 2003). Hill and Pargament (2008) stated that spiritual struggles may cause distress because they challenge the most sacred aspects of life and force one to face harsh truths. Additionally, Fontana and Rosenheck (2004) conducted a study of over 26,000 military service members (SMs) and found that the experiences of killing others and perhaps failing to prevent the deaths of other SMs may have caused this group of veterans to have lower levels of spirituality. Furthermore, those who had lower levels of spirituality (28.3%) reported higher rates of depression and PTSD symptoms (Hourani et al. 2012). Connor et al. (2003) concluded that spirituality may act as a way of coping, not a protective factor against developing PTSD. While these findings are different from the findings in the current study, after examining the number of Soldiers who reported being atheist or having no religious affiliation (13.1%), and those who scored low on the DSES (44.8%) there may be cause for concern. Additionally, when responding to the statement in the CDRISC "When there are no clear solutions to my problems, sometimes fate or God can help," 30.1% answered *rarely true* or *not true at all*. When responding to the question in the DSES regarding finding strength in religion or spirituality, 26.4% answered *once in a while* or *never*.

These answers suggest there may be an underlying connection or disconnection to spirituality that has not been explored within this population.

Life events

Life events were measured using the pre-deployment life events, post-deployment life events, and the childhood experiences subscales from the DRRI. The correlation between pre-deployment life events and resilience was inverse and not statistically significant. These findings are similar to those found by Maguen et al. (2008) when conducting research involving active duty Airmen. Despite experiencing an increased number of life events, the correlation between life events and resilience was not statistically significant with this population. Forty-four percent of the Soldiers in the current study experienced the death of someone close to them and 23.7% experienced a parent who had a problem with drugs or alcohol. Connor et al. (2003) studied a group of people who had experienced at least one traumatic life event throughout their lifetime and found that those who had fewer life events were more resilient. However, those who had the most extreme life stress were only about one third as likely to be resilient. Werner and Smith (1992) found that two thirds of males who were considered resilient chose to join the military because the military service provided opportunities for them to succeed. This also may be true of those Soldiers in this study; they were already resilient and joined the military to perhaps overcome negative life events and succeed. Additionally, because of the advanced training these

Soldiers have gone through, they are better prepared for deployment and thus are more resilient against the negative effects of stressful life events.

There is evidence in the literature indicating some individuals who had an increased number of life events were more resilient against negative mental health outcomes (Connor et al., 2003; Wingo et al., 2010). The findings from this study support the work of Brailey et al. (2007) who examined life events in a group of 1579 Soldiers who had no previous deployment history. They found that life events were associated with PTSD symptoms, with PTSD symptom scores increasing as the incidence of stressful life events increased. In the current study, pre-deployment life events were significantly correlated with the three mental health outcomes of anxiety, depression, and PTSD symptoms. There also was a moderate significant relationship between pre-deployment life events and post-deployment life events, where those Soldiers who reported an increased number of life events prior to deploying also experienced an increased number of life events after returning from deployment. The most frequently reported post-deployment life events were: death of someone close to the Soldier (16%); divorce or being left by a partner or significant other (13%); or had a family member with a serious drug or alcohol problem (13%). These findings are consistent with the literature that discusses the prevalence of divorce or drug and alcohol problems experienced by Soldiers after returning from deployment (Wilk et al., 2010). Furthermore, overall findings are consistent with the literature that states Soldiers who experienced more trauma prior to deploying and had a higher amount of

post-deployment stressors demonstrated greater anxiety, depression, and PTSD scores (Brewin, Andrews, & Valentine, 2000; King et al., 1999; Nayback-Beebe, 2010; Vogt et al., 2008).

When studying a group of Vietnam Veterans, King et al. (1999) found those who had an earlier history of trauma had additional stressors after returning from deployment, which lead to a higher incidence of PTSD. The researchers postulated that those mechanisms that enabled one to endure pre-deployment life events were depleted leaving the Soldiers unable to deal with the subsequent stressors encountered both in the war zone and post-deployment. This lead to a higher incidence of PTSD symptoms and in some cases, chronic PTSD symptomatology. Vogt et al. (2008) found that Soldiers who had a higher amount of pre-deployment stressors had a higher level of depression and PTSD symptoms. The correlations from the studies described were lower than those obtained in the current study, however, this may be due to the timing of the studies. For example, the study by Vogt et al. (2008) was conducted within two months after returning from deployment, and the current study was conducted six months after Soldiers returned from deployment. Additionally, the samples in the previous study were obtained from two different sites where Soldiers were in different units with different combat missions. However, despite these differences, the findings corroborate the presumptions that mental health outcomes are affected not only by things that happen while deployed, but things that happen prior to deployment and after Soldiers return.

There also was a significant positive correlation between childhood events and resilience, where Soldiers who had more positive and cohesive families growing up scored higher on resilience than those who reported less cohesive family experiences. For example, when examining the lives of civilians considered resilient who grew up in economically disadvantaged families, one thing they had in common was family cohesion (Feinstein, Driving-Hawk, & Baartman, 2009; Henderson, Benard, & Sharp-Light, 2007; Rutter, 1985; Werner & Smith, 1992). Soldiers in this study reported having cohesive family experiences; 66% reported family members felt very close to each other *most* or *almost all of the time*. Similar to the current study, Polosny et al. (2011) conducted a study involving Soldiers from an Army National Guard BCT who deployed to Iraq. That study measured childhood family experiences and found the cohort had a mean score of 53.4 (SD = 10.2; N = 424). Furthermore, King et al. (2006), examined childhood experiences in a group of active duty and reserve Soldiers who were veterans from the first Gulf War. Those Soldiers scored higher on the childhood events scale (M = 57.73, SD = 9.80, N = 81) than the Soldiers in the current study, which may have been due to sample size or demographic differences. The current study involved Soldiers from one Army BCT and because each component of the military has different missions and different means for accomplishing the mission, one should expect different outcomes. Furthermore, people enlist in the component of the service that meets their personal needs. This may also cause the results to be different where those who enlist in the army combat units have different demographic characteristics

from others who enlist in other components of the military where direct combat is less likely.

One of the difficulties Vietnam Veterans experienced when returning from deployment was a lack of support. According to Johnson et al. (1997), the American public created an environment where Soldiers felt as if they were being punished because they participated in the war. Koenen, Stellman, Stellman, & Sommer (2003) studied over 1300 veterans from the Vietnam War and found those who had a lifetime diagnosis of PTSD perceived low social support and negative community attitudes after returning from Vietnam. This is in contrast to the reception Soldiers in this study received. When Soldiers were asked about the reception their received when returning from deployment, 72% agreed that the American people made them feel at home when they returned. Additionally, their reception made them feel appreciated and supported. As in the study by Keonen et al. (2003), post-deployment support was significant and inversely related to the PTSD symptoms in Soldiers in the current study. Those who felt more support after returning from deployment had less PTSD symptoms. Many studies have been conducted on post-deployment support and its impact on mental health symptoms (King et al., 2006; King et al., 1998; Nayback-Beebe & Yoder, 2011; Pietrzak et al., 2009; Polusny et al., 2011). Pietrzak et al. (2009) found results similar to those from the current study when examining the factors that protect against mental health symptoms in a group of Active Duty, National Guard, and Reserve Soldiers. Those with PTSD symptoms scored significantly lower on measures of post-

deployment social support. Vogt, Smith et al. (2011) studied post-deployment support and PTSD in a group of Active Duty, National Guard, and Reserve Soldiers from each component of the military who had a deployment history. They found similar results, where post-deployment social support was significantly and inversely related to PTSD symptoms in both male and female Veterans (male, r = -.54, female, r = -.68, $p < .05$), although their correlations were higher than the correlations in the current study (r = -.44, $p \leq .001$). This variation may be due to the difference in sampling because their sample contained more women and had members from each component of the service.

Statistically significant, inverse correlations were found in the current study between post-deployment support and anxiety and post-deployment support and depression. Soldiers who had more post-deployment support had fewer symptoms of anxiety or depression. Similarly, King et al. (2006) found that post-deployment social support was inversely related to anxiety, depression, and PTSD. Their correlations were stronger than those in the current study, however, their sample contained SMs from all components of the service which could have accounted for the differences. Additionally, 25% of the SMs in their study were female. Nayback-Beebe and Yoder (2011) examined social support in a group of active duty enlisted female Soldiers with a recent deployment history. They found highly significant inverse relationships between those who reported mental health symptoms (anxiety, depression, and PTSD) and their levels of social support. Additionally, less social support predicted the presence of

anxiety and depression symptoms, but not PTSD symptoms. While similar to the current study, their correlations were higher perhaps due to having an all female sample versus only 5% women in the current study.

Disruption

Living in the deployed environment can be very challenging, especially in Iraq and Afghanistan where one's movement is restricted and the enemy is not clearly defined. Over 68% of the Soldiers reported the deployment climate as extremely uncomfortable *some* to *all of the time*. Additionally, only 61% reported they got the rest they needed despite 85% reporting they were subjected to loud noises *some* to *almost all of the time*. Maguen et al. (2010), found significant correlations between combat and exposure to the deployed environment and PTSD and depression. Those who were directly involved in combat, killed, or witnessed killings had significantly more PTSD and depression symptoms 90 to 180 days after returning from deployment. Similar findings were discussed in the literature sounding combat and post-battle experiences (King et al., 1995; King et al., 2006; Vogt et al., 2008). Results from this study were similar to those of other studies of Soldiers who have deployed. There was a moderate, positive correlation between the exposure to challenges of living in a deployed environment and perceived threat while deployed. Additionally, there was a moderate, positive correlation between the deployment environment and post-battle experiences. At least half of the Soldiers reportedly interacted with enemy soldiers, took prisoners of war, and saw dead bodies. Jones et al. (2008) studied healthcare providers from the

United Kingdom who were deployed to Iraq. They found even for these providers, those who had the most contact with dead and handling dead bodies were more likely to have PTSD symptoms.

Perceived threat and danger in the deployed environment also affects Soldiers' level of mental health; 69% of the Soldiers did not feel safe while deployed. Additionally, 87% were concerned that the enemy would attack their unit. This causes Soldiers to remain in a constant state of vigilance and may have influenced their levels of mental health symptoms. Soldiers who had more deployment concerns had significantly more anxiety, depression, and PTSD symptoms. These findings are consistent with findings reported in the literature where Soldiers who have increased concerns about threats to their personal safety while deployed to Iraq or Afghanistan reported experiencing more anxiety, depression, and PTSD symptoms (Grieger, Kolkow, Spira, & Morse, 2007; King et al., 2008; Magruder et al., 2003; Vogt et al., 2008). The deployment concerns were higher for these Soldiers than those in the King et al. (2008) study which may have been due to the demographic differences in the sample, such as their sample had more females, less direct exposure to combat, and represented SMs from all components of the military.

Castro (2009) discussed the role that unit support and leadership has to the health and wellbeing of deployed Soldiers. He stated that Soldiers who are involved in combat had more mental health issues if they had poor leaders. Those with high perceptions of their leaders were less likely to have mental health symptoms. When

examining unit support and leadership in the current study, 35.1% of the Soldiers were dissatisfied with the quality of leadership in their unit. Additionally, 24% did not feel supported by the military. There were moderate inverse relationships between the amount of unit support the Soldiers reported and the severity of PTSD symptoms they reported. Additionally, the relationships were statistically significant but not as strong between unit support and anxiety and unit support and depression. Similar findings were discussed in the study by Polusny et al. (2009), where they examined associations between unit social support and depression and between unit support and PTSD symptoms in a group National Guard Soldiers. Those who experienced more unit support reported fewer symptoms of depression and PTSD. The relationship between unit support and depression was moderate and inverse indicating that although PTSD symptoms are significantly related to unit support, in that group of National Guard Soldiers, depression had a stronger relationship to unit support. Pietrzak, Johnson et al. (2010) found similar results where Soldiers who perceived more unit support reported fewer PTSD and depression symptoms. These results were very similar to the strengths of the correlations in the current study. Additionally, King et al. (2006) found anxiety to be inversely related to unit support. Although the relationships there were not as strong as the relationship found in the current study, this may be attributed to using different scales to measure anxiety. Of importance is that they provide evidence that unit support is related to anxiety, depression, and PTSD symptoms in SMs with a deployment history.

One subscale measured the level of harassment a Soldier perceived while deployed. Results are indicative of sexual or general harassment while deployed. Sexual harassment was defined by King et al (2006) as any unwanted sexual contact or verbal conduct from unit members including commanding officers or civilians. General harassment was defined as harassment that was directed at their gender or social status, but was not sexual in nature. There is a large body of literature consisting of studies about women and the effects of harassment or gender differences and the effects of harassment (Kimerling et al., 2010; King et al., 2006; Murdoch, Pryor, Polusny, & Gackstetter, 2007; Street, Stafford, Mahan, & Hendricks, 2008; Vogt, Vaughn et al., 2011). Street et al. (2008) examined sexual harassment and gender differences in a robust sample of Reservists who had been discharged from duty. They found females were seven times more likely to have current PTSD symptoms and four times more likely to have depression symptoms if they experienced sexual harassment and assault. Men were found to be five times more likely to experience depression symptoms if they had been sexually harassed and assaulted. Moreover, Kang et al. (2005) reported female veterans of the first Gulf War who experienced sexual assault while deployed were five time more likely to be diagnosed with PTSD.

Vogt, Vaughn et al. (2011) examined gender differences and combat stress and found that females who experienced more sexual harassment were more likely to experience PTSD and depression symptoms. Similar results were found in the current study, where there were significant relationships between the amount of sexual

harassment a Soldier perceived and all three mental health outcomes (anxiety, depression, and PTSD symptoms). The correlations were stronger in the study by Vogt, Vaughn et al. (2001) perhaps due to the difference in the number of women involved in their study. Additionally, King et al. (2006) found results similar to the current study when exploring the relationships between both sexual and general harassment and mental health symptoms in a group of veterans. Both forms of harassment were significantly related to mental health symptoms, however, in both the current study and King et al. (2006), general harassment had the strongest relationships the mental health outcomes. In the current study, findings may be due to lower reported rates of sexual (M = 7.00, SD = 2.52) versus general harassment (M = 14.85, SD = 6.21). However, when asked if either unit leaders or other unit members forced them to have sex while deployed, 2.6% (n = 8) answered *once or more times*. Kimerling et al. (2010) conducted a secondary analysis of data on SMs who had deployed to Iraq or Afghanistan and had been released from the military but sought healthcare in the Veterans Health Administration. They found women who experienced sexual assault while in the military were two times more likely to experience anxiety disorders, three times more likely to experience depression disorders, and four times more likely to experience PTSD. Men who screened positive for sexual assault were two times more likely to experience anxiety, depression, and PTSD. While the leaders in the military have worked hard to prevent harassment, it is clear that this is a persistent problem that must

continue to be investigated and appropriately addressed, especially during deployment and after returning from deployment.

Mental health outcomes

There were significant correlations between the three mental health outcomes of anxiety, depression, and PTSD symptoms. These relationships parallel the results reported in the literature surrounding co-morbid mental health symptoms (Grieger et al., 2007; Kehle et al., 2011; Maguen et al., 2011). Kehle et al. (2011) found co-morbidity was common in the group of National Guard Soldiers they studied. Eighty-five percent of Soldiers that were diagnosed with PTSD, had at least one additional mental health problem. They found PTSD and depression symptoms most commonly coexisted. Similarly, Maguen et al. (2011) found that of the females who deployed to Iraq, Afghanistan, or both, who were diagnosed with PTSD, 70% also were diagnosed with depression. Males with PTSD were more likely to have alcohol or substance abuse disorders; furthermore, males were more likely to be given a single mental health diagnosis.

Conceptual Framework

The conceptual framework that guided this study was an adaptation of Richardson's (2002) Metatheory of Resilience and Resiliency. Based on the findings of this study, the majority of proposed relationships between the independent and dependent variables were accurate. Demographic characteristics and personal history

were found to influence resilience. Life events were correlated with resilience, however only childhood experiences were statistically significant.

Spirituality was found to be significantly related to resilience. It is interesting to note that while the relationship was statistically significant, it was of little practical relevance because of the low strength of the correlation. However, spirituality did not have a significant relationship with depression and only had a small, statistically significant relationship with anxiety and PTSD symptoms. Furthermore, spirituality was not found to act as a moderator between resilience and mental health outcomes.

Disruption was significantly related to resilience and the majority of measures were also significantly related to mental health symptoms. The deployment environment and PTSD had the strongest relationship of all variables in the model, except the other co-morbid mental health symptoms.

In the original model, post-deployment support and post-deployment life events were measures of the absence of mental health symptoms. This indeed was not the case. These two variables are very important to consider when studying resilience and mental health symptoms, but they are more accurate as measures of life events that may influence resilience and mental health symptoms. Figure 2 provides the revised conceptual framework that reflects these changes.

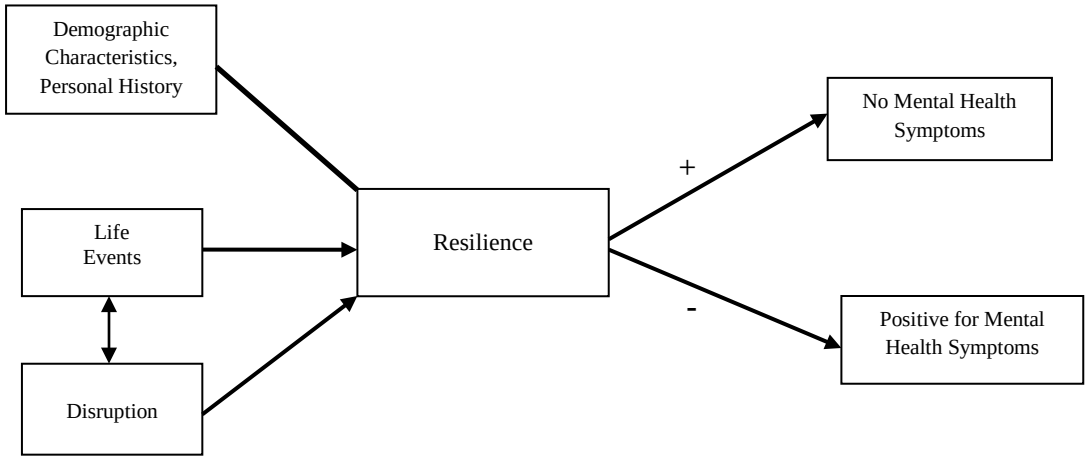

FIGURE 2.
Revised Conceptual Framework

Limitations

The limitations of this study included the use of cross-sectional self-report survey design whereby data regarding events prior to deploying, while deployed, and after returning from deployment were collected at one point in time. This required the Soldiers to reflect back to their childhood and answer questions that influenced their current life situations. However, reflection may have altered their perspective of events before, during, and after deployment, to include multiple deployments.

The results cannot be generalized beyond this BCT due to the sample size and focus on capturing the unique experience of this group of active duty enlisted Soldiers. Soldiers in this BCT are in a division of elite Soldiers who perhaps have a higher level

of resilience at baseline and are better able to function. This perspective may have influenced their results. Additionally, this BCT was predominately male (95%) so results are not necessarily representative of other units where gender is more equally distributed or where females are the predominate gender, such as in nursing. Furthermore, the majority of Soldiers were young and this was their first deployment. They have yet to experience multiple deployments and the stress of deploying more than one time to war zones. Their perspectives may be change after they return from subsequent deployments.

Because this is correlational research, causality cannot be inferred by the results. However, because there was little foundational evidence concerning possible relationships between resilience, spirituality, life events, disruptions due to deployment, demographic characteristics, personal history, and mental health symptoms within an Active Duty population, this was the most appropriate design from which to begin this inquiry.

Although this study had several limitations, it has provided valuable information regarding the relationships resilience, spirituality, and life events have on mental health symptoms. Additionally, it adds to the body of knowledge surrounding resilience and mental health of Soldiers who have a recent deployment history. The findings demonstrate that resilience, post deployment life events, pre-deployment concerns, the deployment environment, and post-deployment support are all significant predictors of mental health symptoms. Finally, this study provided valuable information regarding

the Soldiers' perceptions of deployment as a disruption and the value of resilience training.

Implications and Recommendations

The implications of these findings affect all levels of the military from the leaders who create policy to the nurses providing care and the need to conduct additional research. Recommendations are provided addressing leadership and policy, healthcare practice, nursing education, and research.

Leadership and policy

The implications of these findings should begin with senior Army leaders and the policies made surrounding resilience training and deployment. General Casey (2011) stated that resilience training was mandatory for Soldiers beginning during their entry level training and at different points throughout their careers, such as before and after deploying. While empirical evidence of the benefits of this training continues to be collected, Castro (2009) discussed findings from the Battlemind training program from which the current resilience training evolved. He found that Soldiers who received the training had fewer PTSD and depression symptoms three months after redeploying. Although the training was valuable (Castro, 2009), the benefits came from the opportunity Soldiers had to learn about mental health symptoms and Soldiers learned that what they were feeling were normal reactions to being deployed to a war-zone. Soldiers in the current study echoed these findings when stating the training provided an

opportunity for them to learn what to expect when they returned from deployment. However, 32% of the Soldiers in this study had never received resilience training. Of those who did receive the training, only 60% found it to be helpful, some commenting it was helpful because it gave them a break from performing their routine duties. Negative comments, such as the people who lead the training rushed through it as if they were just completing their requirement, must be further investigated. Finally, a decision must be made to have Enlisted and Officer leaders who have deployment experience train the Soldiers about resilience. This builds credibility and validates the training in the eyes of the Soldiers.

The military has used chaplains for counseling SMs for years. Currently, they are imbedded in the many combat units and deploy as members of that unit. During training and while deployed, they conduct religious services for Soldiers who desire to attend. While this is a source of strength for some, it is not for others. Thirteen percent of the Soldiers reported being atheist or agnostic. Although it is a small percentage of the Soldiers in a BCT, it is noteworthy to assess if the military has the right people speaking to Soldiers in the right places. If those who need help do not believe in God or a higher being, it may be less effective to send them to the Chaplain for counseling. Furthermore, most chaplains are not specifically trained to provide mental health counseling nor are they equipped to provide referrals to healthcare providers. This may further delay the care these Soldiers need. Soldiers may be better served by seeing a social worker, case manager, or mental health nurse practitioner who can provide

referrals so the Soldier can get the appropriate care needed in the most expeditious manner possible.

Army units use to have *Sergeants Time* once a week. This would be a four-hour block of time dedicated to training that was at the discretion of the company's senior Non-Commissioned Officer (NCO). NCO's would use this time to improve areas where the unit was found deficient throughout the week. It is unclear if this time still exists across the Army, perhaps because the time became less focused on training to improve the unit and more focused on standardized training that lacked substance for the Soldiers. With the amount of Soldiers that found resilience training to be useful simply because it gave them time to gather with their unit and not focus on work, this time should be reinstituted and used to help provide some of the training to facilitate positive mental health outcomes. It also is an opportunity for Soldiers to gather to discuss events from deployment and how to improve outcomes on future deployments.

This study has demonstrated that although resilience is related to mental health outcomes, the correlations are not strong enough to lead one to believe that it is the major variable that predicts positive mental health outcomes. Over $125 million was allocated on resilience training, yet in this group of Soldiers, post-deployment life events, deployment concerns, and co-morbid mental health symptoms had the strongest relationships with mental health outcomes. Perhaps the focus of leaders and policy should shift toward addressing these areas. Increased funding for mental health services as well as research on factors such as realistic training experiences and stress reduction

programs that influence the mental health of Soldiers and their family members is desperately needed.

Resilience Centers have been established at many Army posts where combat Soldiers are concentrated. These Centers were designed to provide services Soldiers needed to help reintegrate them and their families after deployment. The Resilience and Restoration Center at Fort Hood, Texas is composed of four clinics: Urgent care-where Soldiers having thoughts of suicide or homicide can walk in for care; Resilience and Restoration Center-provides routine outpatient behavioral health care; Warrior Combat Stress Reset Program-provides an 11-week program for treatment of moderate to severe PTSD; and the Embedded Behavioral Health Team-provides staff to manage patients with serious mental health problems. They are staffed with psychiatrists, psychiatric nurse practitioners, social workers, Chaplains, and psychology technicians (Carl Darnall Army Medical Center, 2012). Although this Center provides extensive therapy and mental health care, not all centers are designed the same. Some, such as the Center at Fort Bliss, Texas, provide counseling services and respite care for Soldiers and their families. It is set up like a recreation center with areas designed for quiet time as well as noisy areas where video games are available. Additionally, it is staffed by a clinical psychologist, social workers, psychology technicians, a Chaplain, and complementary medicine therapists (acupuncturist, Reiki Master teachers, massage therapists, etc.). All Soldiers assigned to the Warrior Transition Unit (WTU) are automatically enrolled and attend scheduled classes at the Resilience Center at Fort Bliss.

Resilience Centers are a practical idea for increasing resilience in Soldiers and their families; however, there are several improvements that should be made at the Command level. Programs should be standardized across the military for familiarization and continuity when Soldiers transfer to other units. Additionally, they should offer the same services that are not mandatory. Making them mandatory does not make them appealing to Soldiers. The Centers should be advertized as places Soldiers can go without fear of retribution; if this is done, Soldiers are more likely to use them.

Although leaders are working diligently on ways to decrease the stigma associated with mental health care, it still exists. Making resilience centers mandatory or placing all outpatient mental health services within these centers may prevent Soldiers and their family members from using them. However, there are benefits to having the Centers if they are advertized properly as a place where Soldiers can go to receive help, or just relax as needed. They should not need permission from their Commanders to attend and attendance should not be reported to Commanders. Furthermore, if programs are coordinated and run from the Centers, they could be places where Soldiers find support from other Soldiers who have similar deployment experiences. Allowing family members to use the Centers should also make them more appealing for Soldiers, while increasing the support for the entire family.

The military has long ago established family support groups. These groups initially were formed by units assigned overseas to provide social support to Soldiers and their families while stationed abroad. After the first Gulf War, the Army renamed

them as the *Family Readiness Group* (FRG), which was thought to place emphasis on the need to ensure all members of the family were ready in cases of deployment. According to Department of the Army Pamphlet 608-47, the FRG is an organization that belongs to a unit whose purpose is to provide support and assistance to all assigned Soldiers and their family members. During times of deployment, the FRG is designed to be a conduit for communication and a community of support for family members. The Resilience Center is an optimal place for leaders of the FRG, which are non-military spouses, to train and assist families both in preparation of deployment as well as preparing for Soldiers to return from deployment. The unit commander is responsible overall for establishing the FRG. Currently, there are some posts where the FRG is very active in supporting the community of Soldiers. However, there are some areas where improvement is desperately needed. Commanders should actively support and oversee the FRG and ensure mechanisms are in place to attract Soldiers and their families without making membership mandatory. Findings from this study show social support and post-deployment support are critical for increasing resilience and improving mental health outcomes. The FRG can play a major role in providing the support Soldiers and their families need.

Healthcare Practice

Knowledge of factors that influence resilience and mental health outcomes of Soldiers can enhance nurses' abilities to assess Soldiers who may be at risk for poor mental health outcomes at each encounter. Some of the positive comments Soldiers

made about resilience training surrounded the ability to talk to someone about their stressors and knowing what to expect when they deployed and returned. Nurses are often in pivotal roles where knowledge of the things that influence anxiety, depression, and PTSD symptoms can guide their assessments of Soldiers with a deployment history. Rather than waiting to conduct these assessments at the PDHRA, they should be assessed each time a Soldier is seen for an appointment. Currently, all patients are screened for physical abuse and PTSD, however, there are no measures for assessing anxiety or depression. Sleep also is not regularly assessed, but sleep assessments could provide insight into the presence of mental health symptoms. Additionally, because females experience a higher rate of sexual abuse when deployed, each female should be assessed for sexual abuse at each health care encounter. Questions should be focused for Soldiers who have deployed and returned within the past year. Nurses should remain alert for Soldiers who have recently returned from deployment and use vigilance in their assessment of those Soldiers and their holistic needs.

Nursing Education

Training and educating Soldiers, families, and others in the community about the signs of resilience and mental health also will help increase vigilance and recognition of adverse mental health symptoms in Soldiers and their families so that prompt care and treatment can be provided. Ongoing collaborations with VA and civilian mental health care providers are an important part of providing care in the community. Community health nurses also should be the liaisons for programs in the

community to help provide onsite assessment of Soldiers and their families as they transition back home from deployment. Additionally, they can mobilize the community by providing classes and other activities whereby support networks can be created. This could provide the social support that is needed to help decrease negative mental health symptoms in this population.

Additionally, nurses are an integral part of training other healthcare providers about recognizing the signs and symptoms of PTSD, anxiety, and depression. Medics, physician assistants, and other providers assigned to the BCT must have a clear understanding of resilience and how to recognize those Soldiers who are experiencing mental health symptoms. Providers must be educated about the causes of combat related mental health injuries and how to help Soldiers prevent them prior to deploying. These providers and medics are the first line of care at home and on the battlefield and are the most important link in the Soldiers chain of survival.

Mental health nurses should also be a part of the training and be assigned to the BCT. They should educate providers assigned to the BCT about skills to help overcome the negative effects of war. Additionally, these Soldiers need to be taught relaxation techniques and other skills for adjusting to life outside the war zone. Soldiers need guidance and ethics training so that when faced with challenging situations, they know how to react automatically. These things all contribute to the successful reintegration of Soldiers.

Nursing Research

More research is needed to examine the interrelationships between unit support, resilience training, social support, and mental health symptoms. Replication of this study, initially involving a different BCT would substantiate or refute findings and allow for further exploration in other populations, to include combat service support units such as medical units, who provide health care to combat arms Soldiers. Additionally, longitudinal research should be conducted to provide a more accurate assessment of resilience and mental health symptoms over time. This would provide insight concerning interventions and the timing of those interventions to best help Soldiers adjust to the challenges of being in the military starting from the moment they join through their transition out of the military.

Additional research with qualitative or mixed methods designs also should be conducted. Findings from such research could further define problematic areas throughout the deployment and reintegration process, which cannot be fully captured using surveys or pure quantitative methods. While quantitative methods add value to the science, without other forms of research, the Soldiers true voice may not be heard.

Chapter Summary

This chapter summarized the purpose, sample, data collection methods, analyses, and findings from this descriptive correlational study that examined the relationships between resilience, spirituality, life events, disruption, and mental health

symptoms in active duty Soldiers who deployed to Iraq and Afghanistan and returned in the past 6-12 months. The findings were then examined in relation to existing studies. Limitations of the current study, implications, and recommendations for healthcare practice, education, and research were discussed. This is the only study that provided information and foundational evidence regarding Active Duty Soldiers and the relationships between resilience, spirituality, life events, disruption, and mental health symptoms six months after the Soldiers returned from deployment to Afghanistan. Results from this study can be used to launch future studies using various units throughout the military.

Appendix A:

Instruments

Soldier Resilience & Mental Health

"Resilience is the inner force that drives individuals to dig deep within themselves to find the strength needed to overcome negative situations."
-Richardson 2002

Principal Investigator: Angela Simmons
Email: angels1025@att.net
Contact number: 210-314-0156

Demographic Survey

Gender: o Male o Female **Age:** _____ **Rank:** _____

Grade: _____ **Number of years in military:** _____

Race: o White o Black o Hispanic o Native American o Asian
o Pacific Islander o Other: _____

Marital Status: o Single o Married o Separated o Divorced
o Widowed

Number of children under 18 years living in your home: _____

Highest level of education completed: o High school o Some college
o College graduate o Graduate school o Post graduate

Religious Affiliation: o Baptist o Buddhist o Catholic o Hindu
o Jewish o Muslim o Protestant o Other: _____

Have you deployed to IRAQ since 2001? o Yes o No

If yes, how many times? _____

Time 1: How long were you deployed?_____

Time 2: How long were you deployed?_____

Time 3: How long were you deployed?_____

Time 4: How long were you deployed?_____

Time 5: How long were you deployed?_____

Time 6: How long were you deployed?_____

Time 7: How long were you deployed?_____

Time 8: How long were you deployed?_____

Have you deployed to AFGHANISTAN since 2001? o Yes o No

If yes, how many times? _____

Time 1: How long were you deployed?_____

Time 2: How long were you deployed?_____

Time 3: How long were you deployed?_____

Time 4: How long were you deployed?_____

Time 5: How long were you deployed?_____

Time 6: How long were you deployed?_____

Time 7: How long were you deployed?_____

Time 8: How long were you deployed?_____

Were you injured during your most recent deployment? o Yes o No

Are you currently receiving medical and/or healthcare treatment for deployment related injuries? o Yes o No

If you answered <u>"YES"</u> to either of the previous two questions, please do not answer any more questions, and turn in your booklet to the researcher.

If you answered <u>"NO"</u> to both of the two previous questions, please continue to the end of the booklet.

Did you complete resilience training? Pre-deployment o Yes o No
Post-deployment o Yes o No

Did you find it helpful? o Yes o No
Why or why not?

_____

_____

_____

Do you view deployment as a disruption in your life? o Yes o No

For each item, please place an “X” in the box below that best indicates how much you agree with the following statements as they apply to you **over the *LAST MONTH*.** If a particular situation has not occurred recently, answer according to how you think you would have felt.

	Not true at all	Rarely true	Sometimes true	Often true	True nearly all the time
1. I am able to adapt when changes occur.					
2. I have at least one close and secure relationship that helps me when I am stressed.					
3. When there are no clear solutions to my problems, sometimes fate or God can help.					
4. I can deal with whatever comes my way.					
5. Past successes give me confidence in dealing with new challenges and difficulties.					
6. I try to see the humorous side of things when I am faced with problems.					
7. Having to cope with stress can make me stronger.					
8. I tend to bounce back after illnesses, injury, or other hardships.					
9. Good or bad, I believe that most things happen for a reason.					
10. I give my best effort no matter what the outcome may be.					
11. I believe that I can achieve my goals, even if there are obstacles.					
12. Even when things look hopeless, I don’t give up.					

	Not true at all	Rarely true	Sometimes true	Often true	True nearly all the time
13. During times of stress/crises, I know where to turn for help.					
14. Under pressure, I stay focused and think clearly.					
15. I prefer to take the lead in solving problems rather than letting others make all the decisions.					
16. I am not easily discouraged by failure.					
17. I think of myself as a strong person when dealing with life challenges and difficulties.					
18. I can make unpopular or difficult decisions that affect other people, if it is necessary.					
19. I am able to handle unpleasant or painful feelings like sadness, fear, and anger.					

The statements below refer to events you may have experienced ***BEFORE YOU WERE DEPLOYED*****.** Please circle "yes" or "no" for each item below.

Before I was deployed, I experienced…

1. …a natural disaster (for example, a flood or hurricane), a fire, or an accident in which I was hurt or my property was damaged.	Yes	No
2. …exposure to a toxic substance (such as dangerous chemicals, radiation).	Yes	No
3. …combat or exposure to a war zone (in the military or as a civilian).	Yes	No
4. …the mental illness (for example, clinical depression, anxiety disorder), or life threatening physical illness (for example, cancer or heart disease) of someone close to me.	Yes	No
5. …a parent who had a problem with drugs or alcohol.	Yes	No
6. …the death of someone close to me.	Yes	No

Before I was deployed, I had…

7. …been through a divorce or been left by a partner or significant other.	Yes	No
8. …witnessed someone being assaulted or violently killed.	Yes	No
9. …been robbed or had my home broken into.	Yes	No
10. …lost my job.	Yes	No
11. …been emotionally mistreated (for example, shamed, embarrassed, ignored, or repeatedly told I was no good).	Yes	No
12. …seen or heard physical fighting between my parents or caregivers.	Yes	No
13. …been physically punished by a parent or primary caregiver.	Yes	No
14. …been physically injured by another person (for example, hit, kicked, beaten up).	Yes	No
14a. [IF YES] did this occur (circle all that apply):	In childhood	In adulthood
15. …experienced unwanted sexual activity as a result of force, threat of harm, or manipulation.	Yes	No
15a. [IF YES} did this occur (circle all that apply):	In childhood	In adulthood

The sentences below refer to your family ***when you were growing up***. Please read each statement and decide how often it was true for your family by placing an "X" in the appropriate box. If you spent time in more than one family setting, please answer these questions about the family in which you spent the greatest part of your childhood.

	Almost NONE of the time	A few times	Some of the time	Most of the time	Almost all of the time
1. People in my family did things together.					
2. Family members got on each other's nerves (annoyed each other).					
3. Family members felt uncomfortable with each other.					
4. Family members were there for each other during difficult times.					
5. Family members felt very close to each other.					
6. Family members avoided each other.					
7. When problems arose, family members compromised.					
8. Family members were afraid to say what was on their minds.					
9. There was fighting among family members.					
10. Family members yelled when they were angry with each other.					
11. Family members discussed personal problems with each other.					
12. Family members shared household responsibilities.					
13. Family members were affectionate with each other.					
14. Family members insulted or swore at each other.					
15. Family members were critical of each other.					

The next set of statements is about the conditions of day-to-day life ***during your deployment***. Please read each statement and decide what amount of time you were exposed to each condition over the course of the entire time you were deployed. Place an "X" in the appropriate box.

	Almost NONE of the time	A few times	Some of the time	Most of the time	Almost all of the time
1.The climate was extremely uncomfortable.					
2. I had to deal with annoying animals, insects, or plants during my deployment.					
3. I had access to clean clothing when I needed it.					
4. I could get a cold drink (for example, water, juice, etc.) when I wanted one.					
5.The food I had to eat was of very poor quality (for example, bad or old MREs).					
6. The conditions I lived in were extremely unsanitary.					
7. I had access to bathrooms or showers when I needed them.					
8. I got as much sleep as I needed.					
9. The living space was too crowded.					
10. I was able to get enough privacy.					
11. The workdays were too long.					
12. I got the R&R (rest and relaxation that I needed.					
13. I got my mail in a timely manner.					
14. I was exposed to awful smells.					
15. I was subjected to loud noises.					

	Almost NONE of the time	A few times	Some of the time	Most of the time	Almost all of the time
16. I had to hassle with putting on and taking off NBC equipment.					
17. I had the equipment or supplies to do what I needed to do.					
18. My daily activities were restricted because of local religious or ethnic customs.					
19. I felt comfortable living in the cultures where I was deployed.					
20. Pressure to conform to the local culture made it difficult for me to do my job.					

The following set of statements refers to concerns you may have had related to your life and family back home **while you were deployed**. These questions do not ask if these events actually occurred, but only how concerned you were that they might happen while you were deployed. Please describe how concerned you were for each item by placing an "X" in the box that fits your best answer.

While I was deployed, I was concerned about…	Not applicable	Not at all	A little	Moderately	A great deal
1. …missing out on a promotion at my job back home.					
2. …missing out on opportunities to start a career while I was away.					
3. …damaging my career because I was overseas for a long time.					
4. …losing touch with my co-workers or supervisors back home.					
5. …being unable to financially support my family while I was away.					
6. …harming my relationship with my spouse/significant other.					
7. …being left by my spouse/ significant other.					
8. …missing out on my children's growth and development while I was away.					
9. …losing touch with my friends.					
10. …missing important events at home such as birthdays, weddings, funerals, graduations, etc.					
11. …the well-being of my family or friends while I was away.					
12. …my inability to help my family or friends if they had some type of problem.					
13. …my inability to directly manage or control family affairs.					
14. …the care that my children were receiving while I was away.					

The statements below are about your relationships with other military personnel ***WHILE YOU WERE DEPLOYED*.** Please read each statement and place an "X" in the box that best describes your answer.

	Strongly disagree	Some-what disagree	Neither agree nor disagree	Some-what agree	Strongly agree
1. My unit was like family to me.					
2. I felt a sense of camaraderie between myself and other Soldiers in my unit.					
3. Members of my unit understood me.					
4. Most people in my unit were trustworthy.					
5. I could go to most people in my unit for help when I had a personal problem.					
6. My commanding officer(s) were interested in what I thought and how I felt about things.					
7. I was impressed by the quality of leadership in my unit.					
8. My superiors made a real attempt to treat me as a person.					
9. The commanding officer(s) in my unit were supportive of my efforts.					
10. I felt like my efforts really counted to the military.					
11. The military appreciated my service.					
12. I was supported by the military.					

The next set of questions is also about your relationships with other military personnel ***WHILE DEPLOYED*****.** Please describe how often you experienced each circumstance by placing an "X" in the box that best fits your answer.

While I was deployed, unit leaders or other unit members:	Never	Once or twice	Sometimes	Many times
1. …treated me in an overly critical way.				
2. …behaved in a way that was uncooperative when working with me.				
3. …treated me as if I had to work harder than others to prove myself.				
4. …questioned my abilities or commitments to perform my job effectively.				
5. …acted as though my mistakes were worse than others.				
6. …tried to make my job more difficult to do.				
7. …"put me down" or treated me in a condescending way.				
8. …gossiped about my sex life or spread rumors about my sexual activities.				
9. …made crude and offensive sexual remarks directed at me, either publicly or privately.				
10. …offered me some sort of reward for special treatment to take part in sexual behavior.				
11. …threatened me with some sort of retaliation for not being sexually cooperative (for example, the threat of a negative review, physical violence, or to ruin my reputation).				
12. …made unwanted attempts to stroke or fondle me (for example, stroking my leg or neck).				
13. …made unwanted attempts to have sex with me.				
14. …forced me to have sex.				

The statements below are about the amount of danger you felt you were exposed to ***WHILE YOU WERE DEPLOYED*.** Please read each statement and describe how much you agree or disagree witheach statement by placing an "X" in the box that best fits your answer.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Some-what agree	Strongly agree
1. I thought I would never survive.					
2. I felt safe.					
3. I was extremely concerned that the enemy would use nuclear, biological, chemical agents (NBCs) against me.					
4. I felt that I was in great danger of being killed or wounded.					
5. I was concerned that my unit would be attacked by the enemy.					
6. I worried about the possibility of accidents (for example, friendly fire or training injuries in my unit).					
7. I was afraid I would encounter a mine or booby trap.					
8. I felt secure that I would be coming home after the war.					
9. I thought that vaccinations I received would actually cause me to be sick.					
10. I was concerned that the tablets I took to protect me would make me sick.					
11. I felt that I would become sick from the pesticides or other routinely used chemicals.					
12. I was concerned about the health effects of breathing bad air.					
13. I thought that exposure to depleted uranium would negatively affect my health.					

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Some what agree	Strongly agree
14. I was afraid that the equipment I was given to protect me from NBC would not work.					
15. I worried about getting an infectious disease.					

Next are statements about your experiences ***AFTER BATTLE*****.** Please indicate if you ever experienced the following events anytime while you were deployed by circling either "yes" or "no."

AFTER the battle while deployed:		
1. I observed homes or villages that had been destroyed.	Yes	No
2. I saw refugees who had lost their homes and belongings as a result of battle.	Yes	No
3. I saw people begging for food.	Yes	No
4. I or my unit took prisoners of war.	Yes	No
5. I interacted with enemy soldiers who were taken as prisoners of war.	Yes	No
6. I was exposed to the sight, sound, or smell of animals that had been wounded or killed from war-related causes.	Yes	No
7. I took care of injured or dying people.	Yes	No
8. I was involved in removing dead bodies after battle.	Yes	No
9. I was exposed to the sight, sound, or smell of dying men and women.	Yes	No
10. I saw enemy soldiers after they had been severely wounded or disfigured in combat.	Yes	No
11. I saw the bodies of dead enemy soldiers.	Yes	No
12. I saw civilians after they had been severely wounded or disfigured.	Yes	No
13. I saw the bodies of dead civilians.	Yes	No
14. I saw American or allies after they had been severely wounded or disfigured in combat.	Yes	No
15. I saw the bodies of dead Americans or allies.	Yes	No

You have completed the questions about your deployment. The next set of statements refers to social support ***AFTER DEPLOYMENT*****.** Please decide how much you agree or disagree with each statement and place an "X" in the box that best fits your choice.

	Strongly disagree	Some-what disagree	Neither agree nor disagree	Some-what agree	Strongly agree
1. The reception I received when I returned from my deployment made me feel appreciated for my efforts.					
2. The American people made me feel at home when I returned.					
3. When I returned, people made me feel proud to have served my country in the Armed Forces.					
4. I am carefully listened to and understood by family members or friends.					
5. Among my friends and relatives, there is someone who makes me feel better when I'm feeling down.					
6. I have problems that I can't discuss with family or friends.					
7. Among my friends or relatives, there is someone I go to when I need good advice.					
8. People at home just don't understand what I have been through while in the Armed Forces.					
9. There are people to whom I can talk about my deployment experiences.					
10. The people I work with respect the fact that I am a Veteran.					

	Strongly disagree	Some-what disagree	Neither agree nor disagree	Some-what agree	Strongly agree
11. My supervisor understands when I need time off to take care of personal matters.					
12. My friends or relatives would lend me money if I needed it.					
13. My friends or relatives would help me move my belongings if I needed to.					
14. When I am unable to attend to daily chores, there is someone who will help me with these tasks.					
15. When I am ill, friends or family members will help out until I am well.					

The next statements refer to events you may have experienced ***SINCE RETURNING FROM YOUR DEPLOYMENT*.** These questions are similar to the items you've answered previously about events before you deployment. For this page, please circle "yes" or "no" for each of the items below.

Since returning home, I have experienced…		
1. …a natural disaster (for example, a flood or hurricane), a fire, or an accident in which I was hurt or my property was damaged.	Yes	No
2. …exposure to a toxic substance (such as dangerous chemicals or radiation.	Yes	No
3. …combat or exposure to a war-zone (in the military or as a civilian).	Yes	No
4. …a serious operation.	Yes	No
5. …a mental illness (for example, clinical depression or anxiety disorder), or life-threatening physical illness (for example, cancer or heart disease) of someone close to me.	Yes	No
6. …the death of someone close to me.	Yes	No

Since returning home, I have…		
7. …experienced stressful legal problems (for example, being sued or suing someone else).	Yes	No
8. …witnessed someone being assaulted or violently killed.	Yes	No
9. …been robbed or had my home broken into.	Yes	No
10. …had a family member with a serious drug or alcohol problem.	Yes	No
11. …been unemployed and seeking employment for at least 3 months.	Yes	No
12. …been emotionally mistreated (for example, shamed, embarrassed, ignored, or repeatedly told I was no good).	Yes	No
13. …experienced unwanted sexual activity as a result of force, threat of harm, or manipulation.	Yes	No
14. …been physically injured by another person (for example, hit, kicked, or beaten up).	Yes	No
15. …lost my job.	Yes	No
16. …gone through a divorce or been left by a partner or significant other.	Yes	No
17. …had problems getting access to adequate healthcare.	Yes	No

The list that follows includes items you may or may not experience. Please consider how often you directly have this experience, and try to disregard whether you feel you should or should not have these experiences. Place an "X" in the appropriate column. A number of items use the word "God." If this word is not a comfortable one for you, please substitute another word which call to mind the divine or holy for you.

	Many times a day	Every day	Most days	Some days	Once in a while	Never or almost never
1. I feel God's presence.						
2. I experience a connection to all of life.						
3. During worship, or at other times when connecting with God, I feel joy which lifts me out of my daily concerns.						
4. I find strength in my religion or spirituality.						
5. I find comfort in my religion or spirituality.						
6. I feel deep inner peace or harmony.						
7. I ask for God's help in the midst of daily activities.						
8. I feel guided by God in the midst of daily activities.						
9. I feel God's love for me, directly.						
10. I feel God's love for me, through others.						
11. I am spiritually touched by the beauty of creation.						
12. I feel thankful for my blessings.						
13. I feel a selfless caring for others.						
14. I accept others even when they do things I think are wrong.						
15. I desire to be closer to God or in union with the divine.						

	Not at all	Somewhat close	Very close	As close as possible
16. In general, how close do you feel to God?				

Over the last 2 weeks, how often have you been bothered by the following problems? Please read each one carefully, and then place an "X" in the box to indicate how much you have been bothered by that problem ***IN THE LAST 2 WEEKS.***

	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious or on edge				
2. Not being able to stop or control worrying				
3. Worrying too much about different things				
4. Trouble relaxing				
5. Being so restless that it is hard to sit still				
6. Becoming easily annoyed or irritable				
7. Feeling afraid as if something awful might happen				

Below is a list of some of the ways you may have felt or behaved. Please indicate how often you've felt this way during the ***PAST WEEK*** by placing an "X" in the appropriate column. Respond to all items.

Place a check mark in the appropriate column. During the past week…	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	All of the time (5-7 days)
1. I was bothered by things that usually don't bother me.				
2. I did not feel like eating; my appetite was poor.				
3. I felt that I could not shake off the blues even with help from my family.				
4. I felt that I was just as good as other people.				
5. I had trouble keeping my mind on what I was doing.				
6. I felt depressed.				
7. I felt that everything I did was an effort.				
8. I felt hopeful about the future.				
9. I thought my life had been a failure.				
10. I felt fearful.				
11. My sleep was restless.				
12. I was happy.				
13. I talked less than usual.				
14. I felt lonely.				
15. People were unfriendly.				
16. I enjoyed life.				
17. I had crying spells.				
18. I felt sad.				
19. I felt that people disliked me.				
20. I could not "get going."				

Below is a list of problems and complaints that Veterans sometimes have in response to stressful military experiences. Please read each one carefully, and then place an "X" in the box to indicate how much you have been bothered by that problem ***IN THE PAST MONTH.***

	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. Repeated, disturbing *memories, thoughts, or images* of a stressful military experience?					
2. Repeated, disturbing *dreams* of a stressful military experience?					
3. Suddenly *acting or feeling* as if a stressful military experience were happening again (as if you were reliving it)?					
4. Feeling *very upset* when *something reminded you* of a stressful military experience?					
5. Having *physical reactions* (e.g., heart pounding, trouble breathing, sweating) when *something reminded you* of a stressful military experience?					
6. Avoid *thinking about or talking about* a stressful military experience or avoiding *having feelings* related to it?					
7. Avoiding *activities or situations* because *they reminded you* of a stressful military experience?					
8. Trouble *remembering important parts* of a stressful military experience?					
9. *Loss of interest* in activities that you used to enjoy.					
10. Feeling *distant or cut off* from other people?					
11. Feeling *emotionally numb* or being unable to have loving feelings for those close to you?					
12. Feeling as if you *future* will somehow be *cut short*?					
13. Trouble *falling* or *staying* asleep?					
14. Feeling *irritable* or having *angry outbursts*?					

	Not at all	A little bit	Moderately	Quite a bit	Extremely
15. Having *difficulty concentrating*?					
16. Being “super-alert” or watchful or on guard?					
17. Feeling *jumpy* or easily startled?					

Appendix B:

Business Card

Front

Soldier Resilience & Mental Health

Angela M. Simmons, MSN, RN
Principal Investigator
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Back

"Resilience is the inner force that drives individuals to dig deep within themselves to find the strength needed to overcome negative situations."

-Richardson, 2002

Appendix C:

BACH Reference Card

Blanchfield Army Community Hospital
Fort Campbell, KY

Behavioral Health Services
- Adult ----------270-798-4097
- Army Substance Abuse (AD) ----------270-412-6883

Chaplain Services ----------270-798-8777
- After hours Chaplain on call ----------270-798-2223
- Chaplain Care Line ----------270-798-2273

Emergency Center ----------270-798-8500
Fort Campbell Abuse Reporting ----------270-798-8601
Warrior Care ----------270-412-3696

National Services/Hotlines

Army One Source ----------www.myarmyonesource.com
Clarksville Crisis Center ----------270-648-1000
Deployment Health Clinical Center----------800-796-9699
Military One Source----------800-342-9647
www.militaryonesource.mil
Suicide Prevention ----------800-273-8255

Glossary

Glossary of Acronyms

Acronyms	Definition of Acronyms
APA	American Psychiatric Association
BAMC	Brooke Army Medical Center
BCT	Brigade Combat Team
CD-RISC	Connor-Davison Resilience Scale
CESD	Center for Epidemiological Studies-Depression Scale
DHCC	Department Health Clinical Center
DSES	Daily Spiritual Experiences Scale
DSM-IV	Diagnostic and Statistical Manual-IV
DRRI	Deployment Risk and Resiliency Inventory
FM	Field Manual
FRG	Family Readiness Group
GAD-7	Generalized Anxiety Disorder-7
HPO	Health Promotion Officer
IED	Improvised Explosive Devices
NBC	Nuclear, Biological, & Chemical
NCO	Non-Commissioned Officer
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
PASS	Power Analysis and Sample Size

PCL-M	Posttraumatic Stress Disorder Scale-Military Version
PDHRA	Post-Deployment Health Reassessment
PHQ-9	Patient Health Questionnaire depression scale
PPRT	Professional Provider Resiliency Training Program
PTSD	Posttraumatic Stress Disorder Checklist-Military version
SAMMC	San Antonio Military Medical Center
SM	Service member
SPSS	Statistical Package for Social Sciences
VA	Veteran's Administration
WTU	Warrior Transition Unit

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VITA

Angela Marie (Tinnin) Simmons was born and raised in Kansas City, Missouri where she attended high school at St. Teresa's Academy. In August, 1989, she entered Creighton University School of Nursing where she received her Bachelor of Science in Nursing. On December 18, 1993 she was commissioned a second lieutenant in the US Army Nurse Corps, where she continues to serve today. Over the years, she has served in many different nursing roles including staff nurse positions in the medical-surgical ward at William Beaumont Army Medical Center, the Neonatal Intensive Care Unit in William Beaumont Army Medical Center, and the Emergency Room in Brooke Army Medical Center; Head Nurse positions in the Pediatric Clinic at Darnall Army Community Hospital, and in the Mother-Baby Unit at DeWitt Army Community Hospital; and Officer in Charge of the Resuscitative Training Office at Brooke Army Medical Center.

In 2004, Angela completed her Master of Science in Nursing Education degree at Clarkson College. Here she was inducted into Sigma Theta Tau International Nursing Honor Society. She was subsequently selected for the Army Long Term Health Education and Training (LTHET) scholarship to attend George Mason University in Fairfax Virginia. In May 2006, she received a Master of Science in Nursing degree in Nursing Administration and a Certificate in Health Information Systems. After graduation, she attended the Army's Intermediate Level Education Course and was

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